THE BOY WHO FOUND OUT

BY MARY HAZELTON WADE

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Can you imagine a school where the pupils invite their animal friends in to play during study periods? That was the kind of school that Henri Fabre first attended when he was a boy in France. While the teacher was busy with the older pupils, the younger ones would leave the door open so that a family of young pigs belonging to the schoolmaster could come in. At other times a mother hen and her brood of lively chicks were pleased to come and look about for crumbs. On Thursday afternoons there was no school, and then what fun Henri and his friends had, especially when they could find a flock of turkeys. They had a clever way of hypnotizing the birds, and the poor farmer's wife thought they were dead!

When Henri Fabre was older he became tremendously interested in insects of all kinds. He was the kind of a person who never gave up, after he once decided to find a specimen that he wanted. It took him more than twenty years to find a certain rare and precious moth, but he had vowed that he would never give up his search for it. In the end, however, it wasn't Henri Fabre who found it at all; it was a boy younger than you are! Who knows, maybe you have come across moths and other insects that would have helped Henri Fabre in his work.

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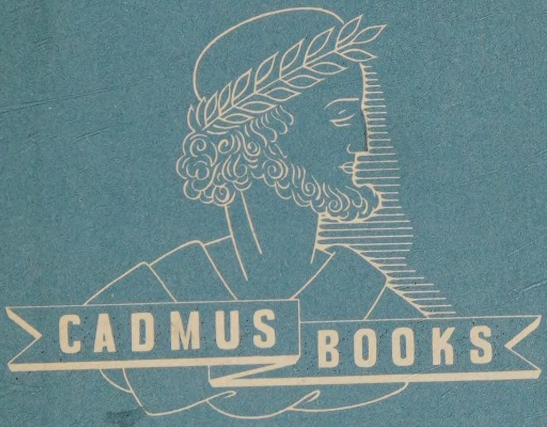

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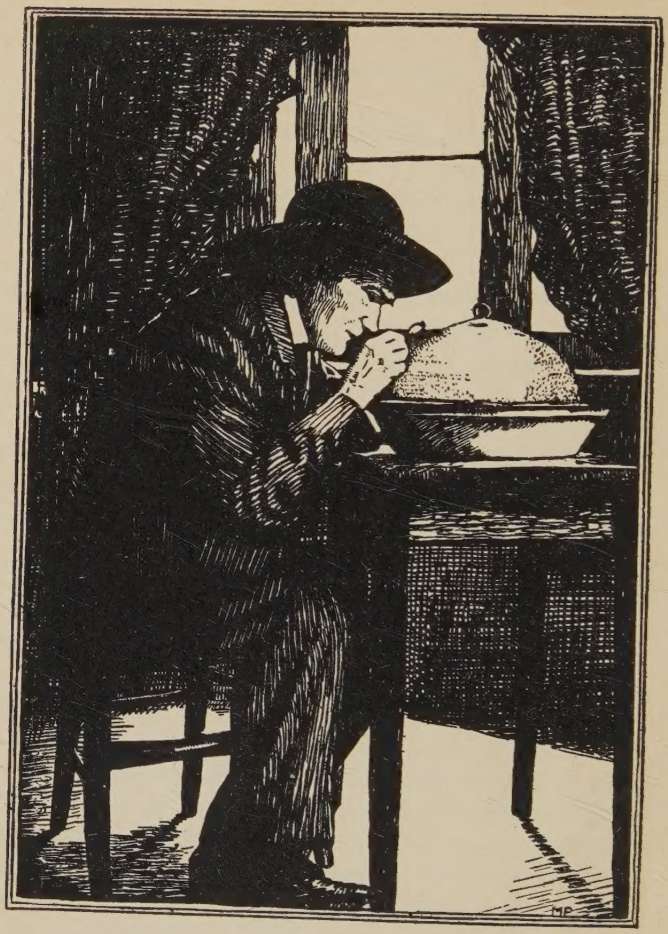

FABRE STUDIES GLOW WORMS IN HIS LABORATORY

THE BOY WHO FOUND OUT

The Story of Henri Fabre

By

MARY HAZELTON WADE

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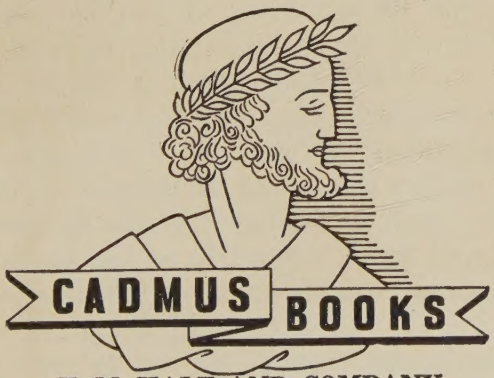

E. M. HALE AND COMPANY
CHICAGO

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PRINTED IN THE UNITED STATES OF AMERICA

PREFACE

In writing *The Boy Who Found Out,* its author has hoped that those who read his story will henceforth seek with possibly greater interest than before to become acquainted with the wonder world around us. The peasant lad, Jean Henri Fabre, began to sense this wonder world while still very young. As the years passed by it interested him more and more deeply till his main ambition became that of obtaining greater knowledge of it and of passing on the knowledge to others. Discomfort and privation were of little moment to this devoted student as compared with the acquaintance with tiny lives which many of the greatest minds had hitherto looked upon as insignificant in the universal plan, and not worthy of their consideration.

To-day Fabre's patient search, continued throughout his long life, is justified; the fascinating books in which he recorded his adventures and discoveries are known all over the world, and people of other countries, as well as of his own loved France, feel that they owe the writer their sincere gratitude for what he has given them.

The Life of the Fly, Insect Adventures, The Mason Bees, The Life and Love of the Insect, and *The Life of the Caterpillar,* are among the volumes of Fabre's famous *Souvenirs Entomologiques,* to

which the writer of the following story is largely indebted for her material, as well as to *The Human Side of Fabre,* by Percy F. Bicknell; *The Life of Jean Henri Fabre,* by the Abbé Augustine Fabre; and *Fabre, Poet of Science,* by Dr. G. V. Legros.

M. H. W.

CONTENTS

		PAGE
PREFACE		vii
CHAPTER		
I.	THE SUN ANSWERS	1
II.	THE QUEER SCHOOL	13
III.	THE FOOLISH DUCK-HERD	29
IV.	THE GREAT DISCOVERY	40
V.	MISCHIEF	50
VI.	THE YOUNG WANDERER	57
VII.	THE DISASTROUS EXPERIMENT	63
VIII.	THE YOUNG SCHOOLMASTER	68
IX.	A GREAT DISCOVERY	80
X.	TRIALS BIG AND LITTLE	86
XI.	THE BEAUTIFUL ISLE	91
XII.	A STRANGE BATTLE	99
XIII.	WHAT THE BEES TOLD FABRE	108
XIV.	THE "CROCODILE'S" VISIT	119
XV.	HOPES AND FEARS	130
XVI.	THE COVETED BADGE	139
XVII.	THE DREAM VANISHES	145
XVIII.	DANGER	149
XIX.	THE GREAT VENTURE	163
XX.	THE LAST MOVE	170
XXI.	THE NIGHT OF THE GREAT PEACOCK	180
XXII.	WHAT GUIDES THE INSECTS	184
XXIII.	HELPERS	194
XXIV.	THE SLAVE HUNTERS	201
XXV.	THE GREAT FESTIVAL	208
XXVI.	THE NOBLE END	214

THE BOY WHO FOUND OUT

THE STORY OF HENRI FABRE

CHAPTER I

The Sun Answers

"I will find out."

In such wise little Henri Fabre, who had suddenly awakened to the wonders of the world about him, spoke to himself.

He could not have been six years old at the time—this child of southern France. As he stood there, curious and full of questioning, he would have made an odd picture to any traveler from the outside world; his feet were bare; his dress consisted of a homespun frock that hung down to his ankles; a coarse handkerchief suspended from a string hung at his side, doubtless placed there by the boy's cleanly grandmother. But if he had need of the handkerchief he did not know it; nor was he aware of his unshod feet, his worn soiled frock. Something of far greater importance was in his mind—it was the desire to receive an answer to the question he had just asked himself. Consequently, with hands flung behind him and with his tiny body straight and tense with eagerness, he faced the sun.

Its light was so beautiful! It gave warmth so generously! It seemed so full of love and strength!

"How do I get joy from it?" wondered the tiny questioner. "Is it with my mouth or my eyes?"

He promptly proceeded to experiment. First, he opened his mouth, and shut his eyes. On the instant the wonder and the beauty vanished.

But now he shut his mouth and opened his eyes. At once he was delightedly beholding the splendor which a moment before had been hidden from him.

The experiment was repeated with the same result. The boy made what to him was a great discovery—he saw *with his eyes*.

He was so delighted he could not keep his knowledge to himself; he must let others know too. And so, when evening came and the family had gathered within the old farmhouse, the child described what he had learned. To his bitter disappointment all but one of his listeners laughed at his tale —he appeared to them so simple, so ignorant. The dear old grandmother alone smiled tenderly at the young questioner of life. She sympathized even if she could not understand.

In spite of the ridicule received, that day was to stand henceforth to little Henri as one never to be forgotten because of what the world had suddenly become for him. It was a new world now—one of never failing wonder. All that had happened before was vagueness, darkness, empty of interest.

At the time of this, to him, marvelous discovery

the boy had not been long in his present home with his grandparents who had agreed to let Henri live with them for a while, as his father was having trouble in supporting his family.

Many new delights fell to the little boy's share in this second home which would have seemed a lonely one to most people. The house was perched on the edge of a table-land three thousand feet above the sea. Oak trees gave occasional shade, and yellow-blossoming broom and thorny hawthorn shrubs grew here and there.

There were no near-by neighbors, but looking off into the distance Henri's bright eyes could distinguish houses in tiny villages and the belfry of the old church of Lavoysse.

Did I say that most people would have considered his grandparents' home a lonely one? The little boy would have scorned such an idea. To be sure, there were so few human beings in the place that wolves dared to prowl about when darkness had once settled down over the earth, and their dismal howls often rent the night air. But in the daytime numbers of geese trumpeted noisily as they waddled about the farmyard; there were also greedy chickens ever on the search for unwary worms; and of course there were hogs bulging with fat, and cows that supplied the milk from which Henri's grandmother made golden butter and creamy cheese, to say nothing of the flock of sheep that furnished the wool for the family's winter clothing.

The little boy whose heart was full of love for all creatures must have especially delighted in the springtime, because then a swarm of baby pigs was sure to claim the care of the old sow. They seemed such pretty little creatures to Henri. And, moreover, they were so greedy that it was laughable to watch them tumble over each other in striving to seize their mother's dugs in their demand for food.

In was in springtime, too, that the awkward, playful calves and the timid lambs were born, needing special care. The whole place was so filled with life at the time that none save the people who live in cities could imagine that the months Henri spent with his grandparents were not filled with delightful adventure.

With the approach of warm weather the little boy noted that his grandfather was very busy preparing a movable fence of hurdles. This, Henri shortly learned, was to form an inclosure in which the sheep and their little ones would be kept safe from harm, now that the time for grazing was at hand.

When the fence was finished it was set up on a slope where the grass grew thick and juicy. A grass hut for the shepherd was placed in the middle of the new pen, and the sheep were then driven inside to be kept henceforth under the watchful eyes of the shepherd, and of two dogs with spiked collars. From now on these faithful animals must be ever on guard to ward off the attack of daring wolves.

Woe to the wolves if they lingered in the inclosure once the dogs were aroused. They were sure to meet death; or at best, cruel wounds made by the sharp teeth of the faithful guardians of the flock.

"Oh, what sport it would be to watch such a battle!" Henri would think longingly, as he pictured to himself the frightened sheep huddled together, and the dogs, with bristling hair and fierce yelps, rushing upon the enemy.

As soon as the grass had been cropped close in one place the fence was carried farther on to shut in another feeding ground and the sheep were speedily settled in their new quarters. Such moving days held interest for Henri, of course; but they did not give him his heart's desire—a night spent in the fold.

He did not dare to plead for the longed-for privilege. He was in too much awe of his stern old grandfather whose voice would thunder like a bull's when he was aroused.

An odd-looking man was this rough herder of cows and sheep, with his short breeches buckled at the knees; with his thick, long hair reaching down about his shoulders, and on his head a curious little three-cornered cap. His feet were cased in wooden shoes lined with straw, that sounded so noisily with every step that his approach was made known from afar off.

Equally vivid in Henri's after years was the picture of his kind grandmother with her headdress of

stiff black felt perched on her head. This odd hat had a crown that was not over an inch in height and a narrow rim which gave the face scant protection from the strong sunlight of summer. But since it was the fashion of the highland women in that part of the country to wear this style of headdress, no other could the good dame think of for herself, though the black ribbon tied under her chin held it in place with difficulty.

This grandam was a very busy woman. She tended the chickens, made cheese and butter, washed the clothing of her family, cooked the meals, and attended to all her other household duties, to say nothing of spinning the wool needed for the winter garments of the family.

Like her husband, she was ignorant of books. All her thoughts were centered in her little home perched on the table-land, far away from cities and towns of whose ways and fashions she knew little and cared less.

Three times each day joyful news was borne to little Henri if he chanced to be in the farmyard. This news was ever the same—that mealtime was approaching. And always the information was brought to the boy by the odor of boiling turnips.

When grown to manhood, he described with zest in his *Souvenirs* what happened when word reached him that the food was actually ready to be served.

"When mealtime came," he wrote, "we all, great and small, gathered about the long table and seated

ourselves on pine benches, each bench being supported by four wooden legs. An earthen bowl and a tin spoon lay at each person's place.

"At one end of the table was the enormous rye loaf, as large around as a cartwheel, wrapped in a linen towel smelling not disagreeably of the lye in which it had been washed. From this loaf the grandfather, with one stroke of the carving knife, cut a piece sufficient for the needs of the moment, and then with the same knife, which he alone was entitled to wield, subdivided this piece into as many equal parts as there were hungry mouths to feed. Each person then crumbled his share into his bowl in such fashion as suited him.

"Next came the grandmother's part. A big-bellied pot was hissing and bubbling over the blazing fire on the hearth. It sent forth a savory odor of turnips and bacon. Armed with an iron ladle plated with tin, she dished up, for each in turn, first a portion of the soup to saturate the bread, and then a good helping of turnips with a bit of bacon, half fat, and half lean.

"At the end of the table opposite the rye loaf stood the pitcher of water for the unrestricted use of the thirsty. Ah, what sharp appetites we had, and how good the food tasted, especially when a white cheese, homemade, concluded the repast!"

At one side of the room was a fireplace so enormous that it would hold whole trunks of trees. A cheerful sight were those blazing logs on cold win-

ter evenings when the wind roared outside the house, and wolves rent the air with their howls.

From a corner of this huge fireplace a slab of slate had been set high against the smoky wall. On this slab stood a pine splinter. As to its possible use, perched high up on a shelf of slate, you may wonder. The old grandmother, with a shake of her wise head, would have told you that it would save her small and precious store of walnut oil from being burned in the crude lamp of the household.

Set fire to the end of that pitch pine stick, and lo! the resin within would make it give forth a weird, reddish light, sufficient for the needs of a family that read no books and did little work in the evening requiring the use of the eyes.

Though each day held pleasures of its own, the evening was perhaps the happiest time for little Henri. It was then that after the table had been cleared of the bowls, and the crumbs had been brushed away, the grandmother sought her distaff which stood in the chimney corner.

Settling herself on a stool before it, she was speedily busy, spinning the wool at her distaff and at the same time telling wonderful stories to the grandchildren squatting on their heels on the floor around her in a big semicircle.

Strange and terrifying creatures she described, dragons and serpents, ogres and lizards, and always, *always,* a wicked wolf as the leading character. Six-year-old Henri would shiver at the horrors depicted,

even while warming his tiny hands as he stretched them out towards the blazing logs in the fireplace.

Little did it matter to the child that there was scant variety in the stories he heard evening after evening. Never did they lack interest or fail to make his flesh creep. For the time being the wolf, the dragons, the serpents, and ogres were tremendously alive in his fancy.

"When we had talked our fill about the terrible beasts and about the dragon and the serpent," he afterwards wrote, "and when the last glow of red had died out in the pitch pine splinter, we went to bed and slept the sweet sleep that follows a day of work. As the youngest of the household I was privileged to lie on a mattress, a sack stuffed with oat chaff, while my mates had nothing but straw for a couch."

The little boy dearly loved the good grandmother who entertained him with her stories. During the months spent with her, her love and sympathy never failed him. To her strong arms he could go with his childish troubles, sure that she would not ridicule him as the rest of the household had done on the never-to-be-forgotten day of his first great discovery.

Not long after that time when the world had suddenly become filled with fascination for the child, he had a second wonderful experience. He has written of it in this wise:

"From a neighboring thicket there used to come

at nightfall a sort of clicking sound that attracted my attention. It sounded very faint and very sweet in the evening stillness. What could it be, I wondered. Was it the peeping of a little bird in its nest? I must find out, and that without delay.

"It was true that wolves from the forest came prowling about at that hour, as I had been told; but never mind, the urge was not to be resisted, and I was not going far—only behind that clump of bushes."

He goes on: "I lay in wait a long time, but all to no purpose. At the least rustle of the bushes the clicking was sure to cease. I tried again the next day and the next; and this time my vigilance brought success. Paf! My hand shot out and caught the singer."

And then! the patient six-year-old searcher after knowledge found that he held no bird, as he had expected. It was only a grasshopper of a kind with which he was already familiar.

Before this he had caught such grasshoppers for the sake of the feasts furnished by the thick part of their hind legs. The young observer discovered nothing new about the creature that day save this: it had a marvelous accomplishment—it could sing. His patient waiting had therefore been richly rewarded!

He told no one of what he had just learned. One bitter lesson had been enough to teach him to keep his own counsel.

New and delightful experiences now followed thick and fast. With eyes ever on the alert, he took careful note of the flowers growing about him; of the birds flying overhead; of the different kinds of plants; of the animals and insects in the woods and fields.

There was one flower that was particularly beautiful in his eyes. Many of its kind grew in a field near the house. They seemed to smile at him with their lovely violet eyes.

After a while these flowers faded, and in their place appeared bunches of red berries.

The curious boy put some of them in his mouth but found that the taste was not pleasant.

"What can they be?" he wondered.

His question was not answered till summer had passed by. Then, one day, he watched his grandfather go to the field, carrying a spade with which he proceeded to dig up the plants which had borne the pretty flowers and bright-colored berries.

To his astonishment, the spade was speedily bringing into view quantities of vegetables he knew well. He had cooked such many a time in his grandmother's peat stove—they were potatoes!

The most commonplace insects as well as the most beautiful birds and flowers were interesting to this young nature lover—bees and butterflies, wasps and ants had something to tell him that made the world each succeeding day more interesting, more wonderful.

As it happened, a friend of the child one day brought him a crude harmonica from a village fair.

This musical instrument, he found, consisted of a series of glass slips, of different lengths, each fastened upon two tightly stretched tapes. There was also a cork on the end of a wire, which could be used as a striker.

On this harmonica the little owner could make, so he afterwards declared, "the most riotous unexpectedness of octaves, discords and inverted harmonies. As a song it had neither head nor tail; but the purity of the sound was delightful."

Of what did these sounds make the child think? Of the chiming of the bell-ringer frogs, to be sure, which he heard in the low lanes near his home on summer evenings.

Care free and happy was little Henri in those days on his grandfather's farm, getting better and better acquainted with Dame Nature who was already showing herself ready to share her secrets with him.

CHAPTER II

The Queer School

"It is time that Henri should go to school," decided the boy's father when his little son's seventh birthday was at hand.

Since the grandparents' farm was far from any school, it became necessary that he should return to his own home in the village of Saint-Léons. Small as the place was, a schoolmaster held sway there—a man who was considered wise enough to give the village children a start up the difficult pathway of learning.

Henri had known no other home than this one, three thousand feet above the sea, till he went to stay with his grandparents. There, in Saint-Léons, he was born on the twenty-second day of September, 1823, and soon afterwards was baptized, receiving the full name of Jean Henri Casimir Fabre.

His father had gained a small amount of book knowledge. "He could read," so his son has told us, "and could understand what he read, provided it was no more difficult than the anecdotes in the almanac."

His wife could not boast of even so much of an education as this. Like her mother, to whom the alphabet was a puzzle and whose attempted solution

she believed might spoil her eyes, she had no interest in learning to read.

"What possible use are the letters of the alphabet," she might have asked, "except when stamped on paper used by the government in important business dealings?"

Ignorant, certainly, was this good peasant woman except in the ways of her household and the care of a few cows and sheep which her husband raised. They were of value, it was easy for her to understand, because by means of them and the scanty crops obtained from the stony soil of the little farm, a meager living was obtained for the family.

As a bird flies it was only a short distance from Saint-Léons to the farm of Henri's grandparents. But when the day came for him to bid them good-by he had to travel twenty-five miles in roundabout fashion over rough mountain roads before he could enter the door of his parents' home.

When at last the journey came to an end, the joys of the past were for the moment forgotten because of his happiness in now having the company of his dearly loved younger brother Frederic.

Then, too, the mystery of school was about to be revealed to him. The teacher was not a stranger, but his godfather, who, he realized, was a friend who had his well-being at heart.

With gay heart, therefore, he started one morning on his way to school. It proved to be a most interesting place of learning. It was at once a

kitchen, a dining room, a bedroom and a schoolroom, as well as the occasional dwelling place of pigs and chickens.

At one side stood a ladder leading to the loft above, and beneath the ladder, in a recess in the wall, stood a large bed. All that the loft contained Henri never knew. Sometimes the schoolmaster climbed the ladder and came back with an armful of hay with which to feed his ass. Sometimes an empty basket was carried up to be brought down filled with potatoes. Without doubt the loft was a storage place where provisions for the family and the creatures they raised were kept.

The big room below, however, and the only one in the house, held enough attractions for the new pupil to keep his mind busy for many weeks.

To begin with, there was the master's desk standing in a small recess, and behind it was the one long window of the house from which could be seen the larger part of the village, stretching along the slope of a valley.

In a niche on the opposite side of the room stood an object of the greatest importance to the pupils, a pail of shining copper, containing water. To this pail the children were allowed to make their way as many times a day as they wished. Perhaps little Henri was always thirsty when he sought that water pail, but it is more than likely that when the spirit of restlessness seized him he took advantage of the privilege given him.

Another diversion never lost its charm for the boy—it was gazing at the many cheap prints on the walls of the room.

They were very attractive, because they were gayly colored—red, blue, green, yellow—as the sunlight touched them. There, before Henri's inquiring eyes, was the picture of God himself with the sun on one side and the moon on the other, both of them staring at him with great round eyes. The Creator of the Universe wore a marvelous robe that swelled "as though puffed out with the storm," the boy thought.

On another wall was the picture of the Virgin Mary in a blue cloak which she had opened to show the seven daggers that had pierced her heart because of her sorrows.

Perhaps even more interesting to the small pupil was the Wandering Jew with a long, snowy beard reaching to his knees. Never could Henri afterwards forget the three-cornered hat, the hobnailed shoes, and the apron of white leather of that famous character who was supposed to live homeless and in misery because of the sins of his people.

Through month after month those pictures and many others, no one of which probably cost more than a halfpenny, held the small pupil's fascinated gaze.

There was something else in that schoolroom that also had great attraction for him. It was the fireplace, as huge as his grandfather's. Every morning

in cold weather, by the schoolmaster's order, he and the other pupils each had to bring a log from outdoors to keep the fire burning through the day.

From time to time the master gave more life to the fire by using the bellows that had its place beside the hearth. An odd-looking affair was this bellows. It was made out of a pine branch, hollowed from end to end with a red-hot iron. More than once Henri had blown through one like it at his grandfather's, puffing out his cheeks like a squirrel's when filled with nuts.

Above the fire were hung three immense pots in which bran and potatoes were generally kept simmering to furnish meals for the master's pigs. The pupils were allowed in cold weather to squat on their heels in a semicircle, as close to the hearth as was comfortable for them, while they worked at their lessons.

Study was not drudgery in that free-and-easy school. As often as they pleased, and they doubtless pleased pretty often, those young students stopped in their tasks to crack and eat a few nuts or nibble at bits of bread they had brought for their lunch. Even then they were not satisfied. When one or another felt that the master's eyes were turned elsewhere, he made a sly spring at one of the boiling pots, and striking his knife quickly inside, stabbed a potato to add to his store of refreshments. Oh, there was plenty to do in that school besides the mastering of lessons!

For instance, if Henri or any other of the younger pupils took advantage of the permission granted to go outside, the mischievous child was quite likely, on his return, to leave the door open. Well aware was he, in so doing, that a family of baby pigs spent much of their time wallowing in a dunghill near the house, and that they would speedily discover the open door. What would happen next? This, of course: as soon as their pink noses scented the potatoes that were boiling in the fireplace inside, they would come trotting into the house, grunting greedily and tumbling over each other in their haste.

As it happened, the bench on which Henri sat with the youngest pupils stood close to the wall under the water pail, and directly in the line of march of those hungry little porkers.

Wiggling their short curly tails, they would run up close to the children and rub against their bare legs. At the same time, still noisily grunting, they would push their snouts into the little hands of the mischievous watchers, hoping that bits of bread or a few chestnuts would reward their search. Sharp and bright were their eyes as they went their rounds without fear of punishment. At the worst, they would only be shooed out into the farmyard by the master's flicking his handkerchief at them when he realized their presence.

Other visitors were quite likely to follow the pigs and distract the pupils' minds still further from their studies. So, perhaps, the next intruders were

a mother hen and her brood of lively chicks, also in search of tempting food.

Henri loved those baby chicks. He and his mates, never tired of attracting them to their side, tickled their downy coats as they fed them with crumbs.

With such interruptions and attractions, it was not possible for our little hero to make rapid progress in his studies, especially when he was left to his own devices most of the time, with only one book given him to study.

It was a penny book, containing the letters of the alphabet, followed on the next page by such combinations as *ba, be, bi, bo, bu.* Terror-inspiring indeed were the strange letterings that could be deciphered only by those possessed of great wisdom. At least, so it seemed to the new pupil, since the schoolmaster's time for teaching was generally given up to the older boys.

Occasionally, one of Henri's mates would tell him the name of some letter which he had himself managed to learn; but the little fellow made scant progress for many weeks.

It so happened that on the cover of that mysterious book filled with seemingly meaningless characters was the picture of what appeared to be a pigeon, below which was a cross. To this picture the boy gave far more attention than to his a, b, c's.

"Its round eye," he wrote long afterwards, "with its circle of dots, seems to smile upon me. Its wing,

of which I count the feathers one by one, tells me of flights on high, among the beautiful clouds; it carries me to the beeches, raising their smooth trunks above a mossy carpet studded with white mushrooms that look like eggs dropped by some vagrant hen; it takes me to the snow-clad peaks where the birds leave the starry print of their red feet. He is a fine fellow, my pigeon friend; he consoles me for the woes hidden behind the cover of my book. Thanks to him I sit quietly on my bench and wait till school is over."

Time passed by. Between visits to the pail of drinking water, the cracking and eating of nuts; quarrels with his mates over marbles; visits of pigs and chickens to the schoolroom, and imaginary flights with the pigeon on the cover of his book, Henri did not progress very fast in learning the fearful alphabet.

At last his father took the matter in hand—going to town one day he purchased for his little son a large print which was divided into sections, in each one of which was a letter of the alphabet, together with the picture of an animal whose name began with the letter printed beside it.

Joyful to relate, learning was henceforth a different matter for the young student. By means of these animals in which he was interested at once, the alphabet was mastered in a few days, and he could now turn to his primer with interest. Behold! in a short time he could both read and spell.

He continued to make such rapid progress that he was soon given a book for his very own. It was a copy of La Fontaine's *Fables,* containing many pictures. Here, to Henri's delighted eyes, were the wolf, the fox, the frog, the magpie, and many other creatures he knew. The stories accompanying the pictures represented the animals as walking and talking like human beings. It mattered little to the young reader that he did not know every word in his wonderful book. He understood enough to give him boundless joy.

The schoolmaster was, to Henri's thinking, possessed of marvelous ability. The boy, with fascinated gaze, would watch him prepare for his pupils' writing lessons as he carefully trimmed their goose quill pens with his penknife. The greatest skill, be it said, was needed in this delicate operation.

When this work was done, he filled his own pen, not from the well containing a mixture of soot and vinegar which the boys used, but from his own special fount of precious red ink.

With this he proceeded to set a copy at the head of each child's paper. Perhaps it was only lines for the fingers of the inexperienced. Or, it may be, it was letters, or even words.

At last the great moment arrived for him to show the talent which he alone of all the village possessed.

"With what undulating movements of the wrist," his young admirer has told us, "does the hand, resting on the little finger, prepare and plan its flight!

All at once the hand starts off, flies, whirls; and lo and behold, is unfurled a garland of circles, spirals and flourishes, framing a bird with outspread wings; the whole, if you please, in red ink, the only kind worthy such a pen. Large and small, we stood awe-struck in the presence of such marvels."

Then, the school day ended, the papers so wondrously adorned were carried to the children's homes that the grown folks might admire the master's artistry.

What would these elders say, think you?

Very likely they would exclaim, like Henri Fabre's parents, "What a man to draw you a Holy Ghost with one stroke of the pen!"

When the little boy had finally mastered his primer, more difficult reading fell to his lot. Unfortunately no delightful story books were there to feed his lively mind; but dry, tedious selections from sacred history, bills of sale, and collections of Latin phrases with which he must become familiar in order to sing the vesper songs at church.

History and geography were simply unheard of in that queer school. Very likely the schoolmaster himself did not know that the world was round or turned on its axis. He may even have never heard of the United States of America.

In arithmetic, Henri learned in course of time to add, and to repeat the multiplication tables. What more, indeed, could the most ambitious students in Saint-Léons desire to learn except, it may be, the

"goes into" of the simplest problems of short division!

Saturday brought its own special delight, because just before dismissal there was a revelry of "sums." First, the head pupil would stand up and recite a multiplication table. As soon as he stopped, the entire class, big pupils and little, repeated the table together, shouting it as only children can shout, till any pigs or chickens that chanced to be in the room fled in fright to the peaceful outdoors.

One table after another was recited in like fashion, the yells becoming ever louder with additional practice, till the last table had been repeated and life became tame once more.

With such sport in the learning, it is not strange that little Henri Fabre knew the multiplication tables better than anything else that Master Ricard's school afforded.

The boy never dreamed of criticizing his master for frequent interruptions in his teaching because he had so many other duties.

To begin with, he was the village barber, as dexterous in shaving the faces of the priest and the notary as in creating marvelous birds with a single stroke of his pen.

He also held the important post of bell ringer, so that on any christening day in Saint-Léons, it fell to his lot to leave the school to its own devices while he rang out the glad tidings to the world.

It was Master Ricard, moreover, who led the

church choir, and it was this same busy man who kept the village clock true to time as he reckoned it. Little Henri must often have watched him enviously as, after looking critically at the position of the sun in the heavens, he would proceed to climb slowly to the top of the steeple and there enter a big network of rafters, inside of which were mysterious springs and wheels.

One of the most important of the good man's duties occupied him a large part of each summer when the older pupils had left school to work in their fathers' fields. This task of Master Ricard's was to care for the grounds about a ruined castle above the village. He gathered apples and nuts there in their season; he cut the hay and stored it; he harvested the crops of oats.

Henri and the other small pupils often bore Master Ricard company on the days when he had such work before him. Sometimes he would stop in whatever he was doing to gather the children about him on the straw or hay and give them short lessons. It was fun having these lessons in the open air instead of in the dark schoolroom.

The little fellow enjoyed helping the schoolmaster-farmer in much of his work on the castle grounds, as for instance, cleaning out the dovecots and gathering the nuts and apples. But, in his heart, he rebelled when told to stamp on the snails that came creeping forth in rainy weather from beneath the hedge bordering the garden. It seemed impossible

to the tender-hearted boy to crush the pretty creatures under his heels. The colors of their shells were so attractive—pink, white, brown, yellow—he thought it a shame to destroy them. Selecting the most beautiful ones, therefore, he stuffed them into his pockets to gaze admiringly at them when he had spare moments, and left the others unharmed.

When the hay was ready to be cut, Henri had especially good times. At that time he made acquaintance with the shy crayfish on the borders of the brook by offering him the most tempting feast possible—a live frog which he had fastened between the split ends of a stick. The boy also caught beetles of marvelous blue in the alder bushes, and gathered narcissus blossoms that he might insert the tip of his tongue into the heart of each flower and gather honey therefrom.

Unfortunately, the delicious honey held a sting unlike that given by any bee—it had the power to induce headaches in the young adventurer when feasting upon them was unduly prolonged.

The cheery little crickets were also a joy as well as the gorgeous butterflies that flitted about care free and happy in the sunshine. Those days spent in the outdoors with the schoolmaster held countless adventures and discoveries for the curious little Henri Fabre.

Though his brother Frederic did not share all his interests, the two boys were devoted companions

and many a "lark" they had together in their father's garden.

It was a tiny thing as gardens go, and situated in a difficult position for the raising of crops! Stretching along the side of a steep slope, it was necessary for it to have retaining walls to hold the earth in place. Below, on successive terraces, were the gardens of other villagers, while above it, on the summit of the hill, stood the deserted castle already mentioned, with its four turrets, about which pigeons were ever flying without fear of disturbance.

In that tiny garden of the Fabres' lettuce was raised, together with turnips and cabbages. These were all it could boast, except a muscat grape vine growing against the upper wall on which the sun shone freely. This vine was the pride of Henri and his family. If there was exceptionally warm weather in a summer it actually produced a half basketful of delicious white grapes that would grow in no other part of the village.

On the lower edge of the garden stood a row of currant bushes. Below it the earth fell suddenly, forming what appeared a precipice in the eyes of Henri and his brother. At the base of this precipice stretched the large and beautiful garden of the village notary. His garden seemed a paradise to the two envious little boys, Henri and Frederic, as they gazed in the harvesting season at the juicy pears on trees whose tops were within their reach!

Another equally tempting sight was a tall walnut

tree growing close beside the slope. Around its base stood many hives, in and out of which swarms of bees were ever flying. It would be very easy for one of the mischievous watchers to lose his balance and, falling over the edge of the precipice, land among the hot-tempered bees. Woe to him then! Little sympathy would he receive from his parents, no matter how many stings his tender flesh might receive nor how many of his bones might be broken, because the children had been strictly forbidden to venture near the edge of the home garden.

That walnut tree, however, they considered, had sent some of its roots into the soil of the Fabres' lot.

"It would surely be no sin," Henri thought, "to gather nuts from the branches which stretch out so close to us here."

With this in mind, unmindful of his parents' commands, he would swing himself out upon a fairly sturdy limb, and straddling it, would nudge himself along till his arms were within reach of the nuts. Then, with a forked stick, he would pull clusters towards him and stuff them into his pockets to provide a feast for his brother and himself.

Suppose the limb should crack under his weight! Suppose he should fall with it into the midst of the surprised bees! Suppose an arm or leg should be broken, to add to the misery of the stings received from angry assailants! Consider, too, the wrath of the notary over the invasion of his garden, to say

nothing of what his parents might say or do! No, he would not suppose or consider anything but success in his undertaking. And, as it happened, the spirit of success dwelt with him and preserved him from the threatening danger.

Joyous days were those for little Henri Fabre when he was still too young to realize that grim Want was ever striving to enter the door of his home.

His father did not always succeed in keeping this unwelcome visitor at arms' length. He had a few sheep; he raised a small crop of vegetables on the stony soil; he had a pig, if he was fortunate enough to reap a harvest large enough to supply the creature with food, as well as his own family; he watched the bees in the few hives at the end of his garden, ever ready in swarming time, to give them a new home so that they would not fly away to seek one elsewhere; he repaired the retaining walls of his tiny farm to prevent storms from wearing away the soil even to the fraction of a foot. A busy man was this peasant farmer, week in, week out, yet it was ever becoming harder to make both ends meet.

CHAPTER III

The Foolish Duckherd

"We might breed some ducks and sell them in the town. Henri could take care of them. He could drive them to the brook every day." This was the suggestion the boy's mother made to her husband one evening while the two were discussing a possible way of adding to their small income.

They talked freely, supposing that Henri did not hear them. He was there in the room, to be sure; but his elbows were on the table, motionless, and his eyes were closed. His parents believed he was asleep.

On the contrary, he was wide awake and listening eagerly to the plan that was being unfolded. "It shall be as you say," he heard his father agree. "There may be difficulties in the way, but we'll have to try."

"Hurrah! I am to be a duckherd," Henri thought joyously, "and every day I am to leave the farm with the ducks in my charge. What sport!"

Now, at the foot of the village, and down near the church, there was a spring whose bubbling waters joined a brook that flowed down to the valley below. An old soldier who had recently returned from fighting for his country in Algiers had a tallow fac-

tory there. The odds and ends left over, such as any fat that had got burned and the scrapings from his pans, he was glad to sell cheap to the villagers.

"They are fine food for ducks," he claimed, "making them grow fat."

With this in mind, Henri's parents decided on that eventful evening to raise a flock of ducks and place them in their small son's care. His dreams that night did not take the shape of nightmare, you may well believe. Instead, he saw himself guiding a brood of lovely yellow ducklings to the pond in which he let them take a bath. After coming out of the water, so it seemed to him in his dream, some of them seemed so tired that he placed them in a basket which he carried home with tender care, driving the rest of the flock before him.

Several weeks went by—exciting ones they must have been to Henri—while two patient mother hens brooded faithfully over eggs that were apparently those which had been laid by creatures of their own kind.

In due time they were rewarded by the appearance of twenty-four downy birds with fluffier feathers than those of any chickens they had ever beheld.

One of the hens was a large black one belonging to the Fabres. The other one had been borrowed from a neighbor.

"Our hen is such a faithful creature, she is able to bring up all twenty-four of the baby ducks," de-

cided Henri's parents. So the second hen was returned to her owner, and Henri's duties began.

Of course his charges were at first too small to be taken to the pond, so a tub with a few inches of water had to satisfy the ducklings' longing to bathe, while the foster mother watched her adopted children with many a misgiving as to their safety.

Alas! in two weeks they were not to be satisfied with a tub of water.

"It contains neither cresses crammed with tiny shellfish," so the young duckherd wrote afterwards, "nor worms and tadpoles, dainty morsels both. The time has come for dives and hunts amid the tangle of the water weeds; and for us the day of trouble has also come. True, the miller, down by the brook, has fine ducks, easy and cheap to rear; the tallow smelter, who has extolled his burnt fat so loudly, has some as well, for he possesses the advantage of the waste water from the spring at the bottom of the village; but how are we, right up there at the top, to procure aquatic sports for our broods? In summer we have hardly water to drink!"

To be sure, there was a tiny spring not far from Henri's house, but several families had to procure all their water there. Each day saw the supply exhausted, after which twenty-four hours must pass before a fresh supply could be obtained. Without question it would be of no use for Henri to take his charges there.

But they were not strong enough as yet to be

driven to the brook at the end of the village. Moreover, cruel cats might be encountered. Pouncing upon the tender ducklings, they would speedily make an end of them. Dogs, barking fiercely, might also rush at them and scare them into flight.

"No," Henri's parents agreed, "there are too many risks in our boy's driving the precious flock through the village."

What then? There was one last resort: up above the farm the hill widened out into a little plain. And out from a ledge of rock behind it flowed a tiny stream that spread out into a pond. It would be a safe and wonderful place for twenty-four lively ducklings to spend the hours of daylight.

Henri joyfully hailed the morning when he first started with his flock up the winding, stony path that led to the pond.

At first all went well. The ducklings were well behaved; the sky was bright, and the air bracing. But unfortunately, the sharp stones in Henri's pathway bruised his bare feet sadly. Soon a blister formed on his heel, giving him constant pain. Limping along as best he could, he thought longingly of the shoes which he was permitted to wear only on the holy Sabbath and special holidays.

His charges soon proved to be in quite as bad a plight as himself. Their feet as well as his were tender and soon became sore. They, too, were forced to limp. They told the cruel world of their suffering by sharp quacks, and finally came to a

standstill, in spite of the whip the little driver flourished about them.

"I'll let them rest awhile," decided Henri, as he reached the shade of an oak tree with his flock.

A few minutes afterwards all were again on their way up the stony hillside and after several more stops the goal was reached.

To the weary ducklings the shallow pond they found there, with its water warmed by the kind rays of Father Sun, was most attractive. They sported and splashed to their hearts' content. They waddled about on the tiny islands of mud that dotted the pond, stopping to feast at will on worms and water cress. There was no danger in that quiet spot of encounters with cruel dogs and cats.

Henri, too, was well content, because a rich field of discovery lay in that shallow pond for him as well as his charges. Almost at his feet he beheld some blackish cords that seemed to have knots in them. They looked like the ravelings of a woolen stocking.

The boy bent down and picked up one of these queer objects. He found it was sticky, yet it slipped through his fingers as he tried to keep it in his hand. Moreover, some of the knots burst open. To Henri's wonderment he beheld a strange-looking object, no bigger than the head of a pin and ending in a tail, which had been encased in it. Instantly the boy knew from its shape what it was—it was the embryo of a baby frog.

Satisfied that he had made an interesting discovery, the lad next turned his attention to the water of the pond on whose surface floated what looked like bunches of string of a delicate green color. Air bubbles kept rising from beneath and forming foam on the surface.

What caused those bubbles? There must be some sort of life below, the young inquirer decided. He determined to find out.

He was richly rewarded when he caught sight of delicate shells and worms different from any he had ever noticed before. Some of the worms seemed to have fins on their backs.

For a long time the young duckherd watched the tiny water creatures and wondered much about them. The world around him seemed marvelous to him. There was so much to learn about it, and he was so ignorant!

After a while he turned his attention to some alder trees growing where the pond shallowed along the edge of the field.

A delightful discovery awaited him there at the base of one of the trees. It was a beetle—a small one of its kind, but of an exquisite blue, beautiful beyond compare. In the prison house of Henri's pocket the lovely bug was speedily placed to be taken out and admired at leisure.

Soon the young hunter turned to another diversion—he became inventor.

"I'll make a mill," he thought. "There is just

the place for one where the spring that makes the pond bursts out through that cleft in the rocks, and falls to the ground below."

He proceeded to gather some flat stones, and placing these on edge, he set up two straws, crossed, on the firm foundation he had made. The mill at once began to turn. The invention had proved a success! If only a companion had been at hand to share the lad's pleasure, he would have been content.

In his loneliness he was spurred on to a fresh conquest—he decided to build a mill. He began at once to collect stones for this purpose, and as some were too large, he began to break them into bits.

Suddenly his hand ceased working, for a wonder burst upon his view. There, in one of the broken stones, was a hollow, and as the sun shone down upon it, Henri beheld, lining the cavity, groups of tiny faces, six-sided and shining brilliantly. The lad had never seen the like except in church on holy days when the crystals of the candle-illuminated chandeliers shone like stars.

As he gazed with admiring eyes at the beauty which had been locked up in that stone, he thought of the fairy tales which he and his brother loved to repeat to each other. In the stories there was always a dragon who guarded a store of precious stones—diamonds, rubies, emeralds. Priceless these were, and beautiful beyond compare. Could it be that he, Henri Fabre, the son of a poor peas-

ant, had discovered treasures like unto those? What would his parents say at sight of that broken stone and others equally as lovely with which he proceeded to fill his pockets? He felt sure that their joy would be boundless.

Not only these treasures did he discover that glorious day. Gold, shining gold, appeared within his reach. The eager little mite of humanity felt sure that "the dragon of the underground treasures" had more still to yield to him. The water from the spring fell on smooth sand which it tossed into bubbles, and as the sun shone down upon it, some of the grains of sand sparkled dazzlingly.

Henri tried to pick them up with the tip of a straw which he wet in his mouth, but they were so tiny he soon decided that gathering them was not worth his while.

"There must be big lumps of gold hidden in the ground," he said to himself. "I'll come back to get them another time."

He turned once more to breaking stones. One of these revealed a new treasure which must have been locked in that prison house for ages. As to that Henri did not concern himself so much as to how it got there and what it was. Was it a shell? It had a spiral shape. Its sides were knotted. It made the boy think of a tiny ram's horn or of flat snails that sometimes came out of the cracks in walls after a rain.

Suddenly the boy realized that it was growing

late and the ducks had eaten their fill. Home was the place now for them and their young master.

Filled with excitement over the treasures that filled his pockets, the little duckherd drove his charges down the steep hillside, utterly unconscious of his sore heel.

In describing the joy of that walk he has written:

"A voice sings in my ear, an untranslatable voice, softer than any language and bewildering as a dream. It speaks to me for the first time of the mysteries of the pond; it glorifies the heavenly insect which I hear moving in the empty snail shell, its temporary cage; it whispers the secrets of the rock, the gold filings, the jewels, the ram's horn turned to stone."

Then came the arrival at home with the boy's pockets bulging with the treasures he had collected, and his heart well-nigh bursting with joy which he expected his parents to share with him!

Unfortunately, the reception was such as he had not dreamed of.

"You rascal! I send you to mind the ducks and you amuse yourself picking up stones, as though there weren't enough of them all round the house! Make haste and throw them away!" Such was the angry father's greeting.

Henri's mother was equally unkind. "A nice thing," she cried, "bringing up children to see them turn out so badly! You'll bring me to my grave.

Green stuff I don't mind; it does for the rabbits. But stones, which ruin your pockets; poisonous animals which'll sting your hand; what good are they to you, silly? There's no doubt about it; some one has thrown a spell over you."

Poor little lad! on the instant his dreams vanished, and his heart became leaden as he turned away to obey his father's behest. All at once life seemed dark and dreary where before it had begun to "blossom as a rose."

Hope and courage, however, were not to be banished. There was a thirst in Henri Fabre's soul that could not be quenched by hard words and angry looks. And that thirst was not to be satisfied except through search and discovery. Secrets that Mother Nature had hitherto guarded jealously were yet to be revealed to this child of French peasants.

Queer, so it seemed to him later on when he began to think about his life, that he had been born with overpowering longing for knowledge when his ancestors as far back as he could learn, were ignorant, narrow in their outlook, concerned only with the gaining of a barren living. To obtain food and clothing for themselves and their children, to sit for a while each evening with dull, unawakened minds, like animals; and then to sleep heavily till their bodies were sufficiently rested to take up the work of the next day—so Henri Fabre's people had spent their lives.

And he? From that birthday of the mind on

his grandfather's farm he had questioned life. He would know more, ever more, about the wonders spread everywhere before his curious eyes. The skies, the rocks, the growing plants and opening blossoms, the waters of the earth teeming with life—to all these the child of peasants was to go in turn, demanding answers to his questioning.

The "poet of science" he was yet to be called by an admiring world bowing in reverence before the wide extent of his knowledge and the depth of his love for all living things.

CHAPTER IV

The Great Discovery

"Where is the sun's home?" So questioned our little peasant lad on an ever-to-be-remembered morning. The sky was without a cloud and sunshine irradiated the earth. Moreover, the boy had waked up fresh as a bird when ready to make its first flight, and with energy in his small legs that was fairly shouting within him to be put to use.

Many a time before he had considered the possibility of obtaining an answer to his question as he stood wistfully gazing from the tiny window of his home towards the row of trees standing on the summit of the hill above the house. They were brave, those trees. He had grown to love them—to think of them as his friends. In calm weather they looked so straight and strong, as if they had power to resist danger. But when storms were raging, his heart went out to them in sympathy as the wind bowed them relentlessly to and fro as if determined to wreak destruction upon them. At such times they swung their branches about with such wild gestures that fear possessed the heart of the young watcher. He would have gone to their assistance if he had had the power to help.

They held a special fascination in the early morn-

ing because then the sun rose slowly behind them and mounted majestically far above their heads to the center of the heavens.

"Surely," Henri often thought, "I could find out where the sun has been all night if I should climb to the top of that hill."

At last the longed-for opportunity arrived. He had been given a holiday, with permission to do exactly as he pleased. With an apple in his pocket he started joyously forth to climb the hill. It was as steep as the roof of his home, his legs were short, and the distance to be covered before reaching the goal soon showed itself to be much greater than he had expected. However, there were no bushes nor sharp rocks in his pathway, which was a great blessing. Consequently there was little danger that he would return home with torn clothing to receive sharp words from his mother or cuffs from his father.

On he climbed up the steep slope, glancing every now and then for encouragement towards his friends the trees that somehow continued to be far, far up above him.

Suddenly he came to a standstill. At his very feet a beautiful bird had flown out from beneath a shelving stone. And look! she had left exposed to sight a nest of hair and straw, within which were six eggs of the most exquisite blue like that of the sky above the boy's head. Never before had he peered into a bird's nest and seen eggs treasured there.

The small traveler was so filled with joy at the sight before him that he lay flat on the ground close by, and stared and stared. He made no sound. He did not care to move.

He was soon aroused by the mother bird's distress at this invasion of her peace.

"Tack! tack!" she cried piteously as she flew about the child, as close to him as she dared.

Sad to say, like many another small boy jubilant over his first bird's nest, he had no pity for her. His mind was too busy shaping a plan: he would rob the nest of one, just one of these beautiful eggs, to take it home as a precious souvenir of his adventure.

"Two weeks later," he promised himself, "when the little birds shall have been hatched, but before they are strong enough to fly away, I will come back and get them."

With the utmost care he proceeded to take the egg, and placed it tenderly on some moss in the hollow of his hand. It was so fragile that in this way only he could be sure of preserving it for the admiring gaze of his mates in the village.

But the trees and what lay beyond! Must the purpose for which he had started on this climb be given up?

"I will not risk crushing my treasure by further climbing," he decided. "Some other time I will try to reach the trees."

Proud and happy, he went down the hill, careful

YOUNG FABRE FINDS THE SAXICOLA NEST

to make no misstep. He had safely reached the foot when whom should he encounter but the priest's curate. The good man was piously reading his prayer book as he walked. He looked up as Henri neared him, and with quick eye noted that the urchin held his hand behind him as if hiding something.

"What have you there, my boy?" he asked.

Shamefacedly the hand was brought forward and in it the curate beheld the precious egg.

"Ah!" he exclaimed, " a Saxicola's egg! Where did you get it?"

Pointing up the hill, Henri answered, "Up there, father, under a stone."

Thereupon the priest continued his questioning till the whole story was laid bare: the nest had been discovered by chance, one only of the six eggs in it had been taken; but the small thief planned to return later to catch the young birds after they should hatch.

"That would be wrong," the father solemnly told the boy.

"You must not rob the mother of her brood," he continued, "you must respect the innocent little ones. You must let the birds God has made grow up and fly from the nest. They are the joy of the fields and they clear the earth of harmful insects. Be a good boy, now, and don't touch the nest."

Henri, abashed and penitent, promised to obey

the curate's command, and went home thinking very hard.

Naturally, he was disappointed that his plan was not to be carried out. But a new idea had been impressed on the child's brain: it was wrong to rob a mother bird of her little ones and cause her grief.

As to the help birds give in killing insects that are harmful to crops, he did not understand as well. One thing, however, interested him deeply—the priest had given a name to the bird. It was a long one—Saxicola. "And so," considered the boy, "creatures as small as that have names! Who gave them these names?"

Long afterwards he learned that names usually have special meanings—the bird he had discovered lived among the rocks and nested beneath a stone, hence was commonly called a stonechat, while its Latin name, Saxicola, means dweller among the stones.

Sometimes, he also learned in that later time, it is called a clodhopper because often seen flying, in the plowing season, from clod to clod, in search of grub worms.

Little did the curate realize that morning when he met Henri what a new world he had revealed to the boy by the careless use of that one word, Saxicola.

"Then everything must have a name," Henri pondered. "Every flower, every insect, every tree, has one that belongs alone to itself and its kind."

The thought brought the world of nature closer to him than ever before. It was a world, he now felt sure, in which countless acquaintances were to be formed, countless friendships to be ripened.

New experiences followed, close upon the discovery of the bird's nest. Among other places where the boy loved to seek fresh knowledge was the brook which flowed down the hillside on whose slope he was living and on whose western front spread "an avalanche of garden patches." The waters of this brook were remarkably clear and lovely. It was so narrow that Henri could cross it at almost any point with one bound of his short legs.

Halfway in its course a miller had diverted its waters so as to form a basin which he walled in to supply the power needed for turning the wheels of his mill.

One day, as it chanced, Henri visited this lonely spot with a boy chum. Curious as to what he should find within the inclosure, he boosted himself on the shoulders of his companion and peered over the fern-carpeted wall. Far down inside he beheld deep, stagnant waters. They had a sickening appearance, covered as they were with a coating of shiny green.

Oho! here and there were rents in that coat through which, with slow, lazy movements, swam a horrible looking object that sent terror into the heart of the young beholder.

"It may be the child of the Serpent and the

Dragon," the boy thought shudderingly, as he recalled the stories that had been told him about those monsters, and he made haste to get down from his perch, fearful even at a safe height of what had been revealed to him in the waters below.

That terror-provoking creature was, without doubt, a harmless salamander, as Henri came to believe years afterwards.

Below the mill the brook ran freely, arched overhead by the interwoven branches of ash and alder trees that grew along its borders. Henri, adventuring there, fancied he could see in the shadowed waters of the brook deep caverns about whose entrance glints of sunlight sported gayly.

"This," he has told us, "is the haunt of the red-necktied minnows. Come along very gently, lie flat on the ground and look. What pretty little fish they are, with their scarlet throats! Clustering side by side, with their heads turned against the stream, they puff their cheeks out and in, rinsing their mouths incessantly. To keep their stationary position in the running water, they need naught but a slight quiver of their tail, and of the fin on their back. A leaf falls from the tree. Whoosh! The whole troop has disappeared."

After watching the minnows, perhaps our young curiosity seeker turned his steps to a group of tall beech trees where crows were perched on the high branches, chattering noisily. Plenty of company, therefore, had the boy as he wandered about on the

moss-carpeted ground in search of adventure. Aha! suddenly he came upon a treasure. It was an odd-looking object, shaped like an egg. Could a hen have come this way and laid the egg in this quiet, solitary spot, he wondered.

He picked it up, and carefully examined it, now on this side, now on that. He found it was not an egg, but something of far greater interest, of delicate texture and coloring.

He turned from this to discover other objects like it, but different in size and shape and tint. Some were like bells; some like cups; some were fashioned like funnels; some, broken apart, were "weeping milky tears"; some were like hemispheres.

He turned from them to step on still others that had just attracted his attention. As he crushed them with his foot they became tinted with blue. Curious these were, but still more so were some that were shaped like pears, with openings at the top through which smoke rose as Henri pressed them from beneath with his finger.

Altogether, the young hunter had come upon a curious find in the beech grove. He stuffed his pockets full with his treasures that he might enjoy them at his leisure, ignorant that he had discovered a rich colony of mushrooms.

To his disappointment, when he brought some of them to his mother, she refused them entrance to the house.

"They are poisonous," she declared impatiently, "and any one who eats them is risking his life."

Henri was sad at the idea. "How can such beautiful things be harmful?" he pondered. "That should not be."

His mother's words, however, did not deter him from continuing to visit the mushrooms in their dark home under the trees. Again and again he sought them, spending happy hours dividing them up into classes. Years afterwards he found that, ignorant as he then was, he had done this correctly.

CHAPTER V

Mischief

There must have been considerable excitement in the village of Saint-Léons when the news spread that the Fabres were to seek a new life in the town of Rodez. The father had become discouraged in trying to support his family on the stony little farm where Henri had been born ten years before, and was about to make a new venture.

"I am going to keep a restaurant," he told his friends.

"What a change it will be for Antoine Fabre!" they must have said to each other, as they discussed the news. "Not only he, but all his people before him, have dwelt here in the country away from temptation."

They next asked wonderingly, "What will the city do for him and for his children?" After uttering such words they doubtless sighed and shook their heads sagely.

Not long afterwards Henri bade good-by to his upland home with its birds and flowers, its brook where he loved to watch the minnows, and its fascinating beech grove where he had made acquaintance with mushrooms, and found himself settled in

a busy town where the houses were close together and the streets were tiresomely narrow.

There was an excellent school in Rodez and the boy was allowed to enter this as a free pupil. But there was one condition: he was to render certain services with three other boys in the chapel. Clad in a white surplice, with a red cassock, and a red skullcap on his head, he wanted to do his part. But he was the youngest of the four lads, and so shy that he was little more than a figurehead.

"I did little more than walk on," he has told us. "I counted as a unit, and that was about all, for I was never certain when to ring the bell or when to move the missal from one side of the altar to the other."

In his school work, however, Henri studied faithfully and excelled in writing compositions and translating his Latin exercises.

Wonderful characters figured in his Latin books that stirred Henri's imagination. There was Cadmus the famous Phœnician, who planted dragons' teeth as he would seed, and lo! the harvest he reaped was of armed men who proceeded to destroy each other as they appeared out of the ground.

There was another character, Cynægirus, who filled the young student with equal amazement. So strong were the jaws of this giant that, after losing his hands in a furious fight, he was able to seize a Persian galley with his teeth and hold it imprisoned there. Marvelous did these and other mythical

heroes appear in the eyes of the new pupil from the country.

Though Henri enjoyed his studies, he welcomed the coming of each Thursday and Sunday when books were put aside and he was free to wander at will in the big outdoors, through the whole afternoon.

Thursday, especially, was his delight. Then it was that, lessons over early in the day, Henri and his mates would troop down to the end of the valley, "so many bands of madcaps," as he has since described them.

As soon as they reached the river flowing quietly in front of them, the sport would begin. Up would go their trousers to the knees. Then, bow-legged, they would plunge with forks held ready in their hands to spear any innocent loaches swimming close to shore. Ah, but these were quick-moving, and few there were that did not catch sight of the murderous fork in time to escape through the water weeds.

Tiny fellows, no longer than one's finger, were those loaches; but when one of the boys was fortunate enough to spear his prey such a shout of victory rang through the air as was enough to drive all the other fishes to safer quarters far away from the fun-loving young fishermen.

Still another sport gave Henri abounding delight, shocking as some might call it who have long passed boyhood and have forgotten the joys of their own youth. It was robbing apple trees! With the com-

ing of the autumn Henri and his chums were wide-awake for possible adventures in the neighbors' orchards. Never were the pockets of those mischievous lads in such need of enlargement as when, after securing their luscious plunder, they proceeded to stuff their pockets with the stolen fruit. Then, silent as so many rabbits, they stole away to enjoy their feast. Well, boys will be boys, as the saying is, so Henri should not be blamed too severely for his share in these thieving expeditions, especially as his daily fare at home was coarse and scanty.

And now you shall hear of a sport which Henri loved dearly, and which had to do with flocks of turkeys that sometimes wandered about from one place to another in search of locusts which were a favorite food of theirs.

"There's no danger of harm coming to them," the owners of the turkeys believed, "so there's no cause for worry if they are out of sight."

When thinking this, they were not considering the fact that on Thursday afternoons the school lads were free to wander also, according to their own sweet will.

"Look! there's a flock," Henri would perhaps call in low tones to his mates, as he caught sight of some turkeys with no human being in sight to guard them.

At this the troop of mischief lovers would advance cautiously upon the birds, with eyes set upon the respective ones they intended to capture.

And now, of a sudden, a wild squawking filled the air, as each boy seized a turkey, and tucking its head under its wing, proceeded to rock it to and fro in his unyielding arms till it was apparently asleep. Thereupon it was laid gently down on the ground where it lay with no sign of life. A queer sight was the field now, strewn with the bodies of seemingly dead turkeys.

The creatures were only playing dead, many people might say in ignorance; but in reality the birds had been hypnotized by their young captors and consequently been made powerless for the time being.

Woe to those mischievous lads, however, if the woman who owned the flock had heard the squawking while the turkeys were being caught.

"Something is wrong!" she would doubtless exclaim in dismay, and seizing a whip, would rush forth to avenge any harm done to her precious birds.

When she reached them not a boy would be in sight—the mischief makers had hastily taken to their heels and hidden behind some convenient hedge. Here they could watch and laugh to their hearts' content, as their fathers had doubtless done after being engaged in a similar prank in their own boyhood.

In spite of Henri's love of the outdoor world he was faithful to his studies during the four years he lived in Rodez.

"I must do my best," he would say to himself. "I must not be idle when my father and mother are working hard to support me."

They had already impressed on his mind that he could attend the school on one condition: he must excel in his lessons and win prizes that were offered to good scholars. Consequently he rose fast from one class to another, and even Latin became an easy conquest.

Virgil had a charm of its own for the young nature lover, because it contained not only delightful stories of great heroes, but fascinating descriptions of bees and cicadas, of doves and crows and goats. Indeed, no creatures were so small or humble that they did not hold some special interest for the boy.

Henri, young and full of spirits as he was, sometimes had moments of solemn wonder about life itself. It was so strange, so fleeting. And death —what was that mysterious event that followed close at the heels of life?

This questioning was pressing hard upon his mind when he chanced one day to visit a slaughterhouse. As he was passing by, he saw a man driving an ox inside and something within him urged him to follow.

Exactly why he did this he never knew because he had always had a horror of the place.

Close on the heels of the victim he pressed, watching every movement as the meek, dull-natured

creature led by a rope fastened securely around his horns was led into the building.

Suddenly the ox realized that this was not his home. He began to pull violently at the rope, striving to free himself. In vain! The rope that held him was drawn ever tighter through an iron ring fastened in the stone pavement, until his muzzle had been brought close to the floor.

While an assistant held him in this position, the butcher came close, holding a sharp pointed knife, and the next instant drove it into a vital spot in the animal's body. Without a sound the huge creature fell lifeless to the floor.

Henri, who had stood watching, fled hurriedly from the place, unable to think clearly. When his bewilderment passed, he was conscious of amazement that a knife no larger than the one he used in opening chestnut burrs could so easily kill a huge animal like an ox. Life and death now seemed more mysterious to him than ever.

CHAPTER VI

The Young Wanderer

Not long after Henri's visit to the slaughter-house, cruel tragedy overtook the fourteen-year-old boy in his home. His father had met with complete failure in his business as a restaurant keeper. No longer could Henri study about old Roman heroes in his pleasant school and have Thursday frolics with his mates. No longer was he to be sure of a comfortable bed at night and food to satisfy his hunger. He was at the mercy of a cruel, unsympathizing world.

Unhappy years followed in which the father failed repeatedly in business. During that time Henri earned his living in whatever way opened to him. In one place he peddled lemons. In another, he joined a band of workmen who were building a railroad; and so on and on. He often went to bed supperless, awaking the next morning to wonder how he might earn enough money to buy a scanty meal. Yet, through all his hardships and sufferings, his love of Nature and her children continued strong within him. Once, when he had only a halfpenny in his pocket, and needed it sorely for the purchase of food, he spent it for a book of famous poems on which he proceeded to feast his mind. Then, to

satisfy the craving of his stomach, he ate a few bunches of grapes which he discovered growing along the border of a field and picked when no one was in sight. Surely that theft was forgiven in Heaven.

There were gala days, however, during those years when fortune's sky was black. Such days were those when the young wanderer made friends with some animal he chanced to meet. Perhaps it was a stray dog that recognized him as a being who had fellow feeling and sympathy. Instantly the hearts of those two, boy and dog, leaped out to each other in understanding and affection.

Most important events of all were the discoveries Henri occasionally made in the insect world as he trudged along, lonely and homeless, along dusty country roads. One day his deepset thoughtful eyes grew especially bright when he found a beetle unlike any he had ever seen before! It seemed very beautiful to him, clad in dark brown, with velvety white spots here and there on its surface!

As he held the beetle between his fingers it made a queer noise in complaint of his treatment.

"It is much the same sound as I have made," he thought, "when I have rubbed the wet end of my finger over a pane of glass."

The discovery that day doubtless was as interesting to the young nature lover as that of an astronomer at first sight of a new comet. The wonder of creation revealed in the tiny insect made

poverty forgotten—the world was full of miracles and teeming with beauty. Poverty seemed unworthy of consideration.

During that period of dark unrest for Henri's family the lad spent a brief period in the academy at Toulouse where he was allowed free tuition. But his father shortly decided to try his fortune at Montpellier, near the southern coast of the country, and in that new home Henri soon found himself, with the idea strong in his mind of studying medicine if it might be made possible.

With his ability and disposition, he would doubtless have made an excellent physician, yet it proved afterwards to be well for the world that he could not carry out this intention. Instead, he was obliged to continue earning his living in whatever way came to his hand.

Things will take a turn, however, if we are patient and faithful. So Henri found to his joy when an opportunity came to him to try for a free scholarship in the Primary Normal School of Avignon. He passed the examinations successfully and was speedily enrolled among the pupils.

The school was outwardly a dismal place, but its gloom did not trouble Henri, because he obtained there food and shelter for his body together with nourishment for his lively mind.

The gloomy building had four high walls within which was a small courtyard, "like a bear's cage," as Henri described it, and with a plane tree in the

center. Under this the boys contested with each other for the shade of its branches while they studied.

Around the courtyard were tiny classrooms, "like so many cages for wild beasts," to Henri's thinking. These classrooms were unlighted and the air in them was close and heavy because they were so built that during the three years the youth spent there, he never saw the sunlight enter them, so far as he remembered afterwards.

Spelling, arithmetic, geography—these were his chief studies, and tiresome they were because those who taught them did not make them interesting.

The subject of natural history was never even touched upon. Birds and insects and their wonderful habits, flowers and the ways of the plant world, rocks and the stories to be read in their formation —none of these marvels of creation were generally thought worthy of study in Henri's young days.

Fortunately for him, the director of the school gave the students unusual liberty. As soon as they had mastered their lessons, they were allowed to spend their spare moments in whatever way they wished. Consequently, Henri, who learned quickly, sometimes composed poems or read an entertaining book while his mates were still writing out their exercises. Or perhaps he busied himself dissecting a dead beetle or separating into its parts a flower which he had brought to his desk. For the time being the narrow school walls had no existence for

him; he was in another world—one of marvels and miracles.

He had already heard of a wonderful study called chemistry, the knowledge of which enabled the experimenter to change different substances into still others. But it was rarely referred to in the Normal School of Avignon and the young student, left to himself, formed queer notions about it.

"A chemist is a kind of magician," he thought, as he pictured such a person as a wizard with a tall star-spangled cap on the top of his head, and wielding a wand that worked magic.

The Normal School, gloomy as it was, had a next door neighbor, even more gloomy than itself. This was an old building formerly used as a church, with a tall steeple on whose top was perched a rusted weathervane that creaked with every motion. Numberless bats, creatures of the night, haunted the building and flew in and out among the carvings of the roof, while owls hooted dolefully in hidden corners.

Within the building, under the high vault, it was equally dismal. On two evenings each week a strange looking man gave free lectures there on physics and chemistry. It was little wonder that Henri imagined him concocting abominable mixtures in that weird place to the amazement of the beholders.

When this chemist-magician suddenly appeared in the classroom, he would burst into view like a

whirlwind. His head was bare save for the scant red hair above his forehead. A high stiff collar encircled his throat. His cheeks were always red and his eyes sharp and piercing. He had the manner of a bully, which made the boys nearly lose their wits in trying to answer the questions he hurled at them.

Poof! with suddenness equal to that of his coming, he would disappear from their sight, and there would be long sighs of relief from those students who had been his helpless victims for the few minutes that had seemed hours. With the acquaintance of such a man as that, Henri's idea of a chemist naturally did not change to any great extent, and he had no craving to study the problems that seemed to him to savor of sorcery.

CHAPTER VII

The Disastrous Experiment

"The boy is not only stupid, but lazy," agreed Henri's teachers when the middle of his second year at the Normal School arrived with a bad showing for what he had been accomplishing in his studies.

It was not surprising that such a bad opinion of him arose. He had become more and more idle in the classroom, and indifferent to his studies. Nevertheless, he had good reason for caring little for them because they had not been made interesting. And, naturally, he had turned his thoughts more and more to discoveries in the kingdom of nature.

Nevertheless, it was a terrible shock to the sensitive youth to be reproved severely by the schoolmasters even though he deserved their criticism.

"But it is not too late to show what I can do," he thought with shame. "I will yet prove to my teachers that I am not stupid or lazy, but can do better, much better than ever before."

With this in mind he asked, "Will you allow me to follow the work of the third year during the remainder of this year, together with the regular work of this period?"

The teachers must have been amazed at the request. And yet, though they were filled with doubt

as to the possibility of the proposed achievement, they gave Henri permission to do as he requested and he set to the big task with zeal.

What, think you, was the result? When the second year came to an end, it found the determined youth possessed of a well-earned diploma. He had passed every examination of the three years' course successfully; better still, he had won the admiration of his teachers.

In celebration of the proud event of graduation the instructor in mathematics promised his pupils a treat. He told them he would perform an experiment in chemistry before their very eyes—he would show them how the valuable gas, oxygen, could be obtained.

The experiment, he told them, was to be performed next door, in the laboratory of the chemist whose occasional visits to the Normal School had always set the pupils agog.

Furthermore, after the visit to the laboratory, the youths were to take a holiday walk to a charming village not far away, and consequently were to wear their best Sunday go-to-meeting clothes to make as fine a showing as possible.

Wednesday night arrived—the great event was to take place the next afternoon. Henri was so much excited at the thought that dawn found him still sleepless.

The expected hour arrived at last and the thirty pupils of the school, arrayed in long black coats

and tall hats, marched imposingly to the chemist's laboratory in the gloomy building next door.

With heart beating fast, Henri found himself inside the nave of the old church through whose stained glass windows the light came dimly.

At the back of this odd laboratory he saw, dimly at first, many high benches for the use of the onlookers, while in the center was the object of chief interest—a huge table on which stood a tub plastered with tar, lined with lead, and filled with water. A most important vehicle this proved to be, since it was used by the chemist for collecting gases.

Eager-eyed and with fast beating hearts, the youths watched every motion of their teacher as he lifted a long glass tube with sharply bent neck, and proceeded to pour into it a black substance which had the appearance of powdered charcoal.

Its name, the master explained, was manganese dioxide, and from it he intended to liberate the oxygen that was stored in it.

To do this, he told the curious youths gathered about him, he must add sulphuric acid. This acid would be the magician that would cause the desired liberation.

The retort was now filled with the two substances and after being placed on a lighted stove, was connected by a glass tube with a bell jar filled with water.

Closer and closer drew the eager young onlookers—all but Henri, who had no admiration for

"the mob of the curious who elbow their way to the front and quarrel for the best positions when there is anything to see, even if it be only a dog fight."

He alone, therefore, remained in the background, watching everything that took place, however, with as much interest as his companions.

Some of them, meddlesome imps that they were, were not content to merely look on. They felt called upon to help. So, noticing that the retort was not straight, they ventured to set it right, as they thought, while others blew hard upon the blazing coals in the stove to increase the heat.

And then? Such confusion and noise there was of a sudden! The mixture had exploded and the retort had burst under the pressure. On the instant, splinters of broken glass went flying about in all directions. Worse still, the boiling contents of the vessel burst forth, striking those of the watchers who were nearest it. Their shrieks of distress rang through the air.

Without holding back for a second, Henri rushed forward to the assistance of the one of his mates who had been most grievously injured. The fellow was maddened by pain and yelling with agony. Well he might be, as he had received a portion of the boiling substance full in the face. It had even entered his eyes.

Quick to realize what should be done to give relief to his friend, Henri, with the help of another youth, dragged the sufferer to a sink that stood

outside the lecture hall, and holding the tortured face under the tap, let the water flow freely upon it.

The pain was eased at once, but if it had not been for Henri's presence of mind, his schoolmate's eyes would have been sightless for the rest of his life. As it happened, with the aid given by a physician who shortly arrived, the youth recovered completely in due time.

Now let us see how it was with the others who had been injured. When Henri returned to the laboratory he found a sorry state of things: the teacher's clothing, with holes burned through it in many places, was still smoldering so that, for his own safety, he was already removing his garments and dressing himself in some loaned to him by different students. Many of them had suffered in like manner and had, moreover, been painfully burned. A grievous holiday, indeed, this proved to be for most of the class.

CHAPTER VIII

The Young Schoolmaster

Through the kindness of the principal of the Normal School, Henri remained there after his graduation.

"While you are waiting to receive an appointment to teach," the good man told him, "I will help you, if you like, in reviewing your studies in Latin."

This seemed a great opportunity to the youth of eighteen who was anxious to learn everything possible. To study with the help of the principal, and at the same time have his board and lodging free! It seemed almost too good to be true. So, with no regret that he could not spend the summer days outdoors among his loved birds and insects, he applied himself diligently to his books.

In due time he had his reward. He was appointed to be master of the upper primary school connected with the college at Carpentras.

"It was a strange school, upon my word," he has told us, "notwithstanding its pompous title of 'upper'; a sort of huge cellar oozing with the perpetual damp engendered by a well backing on it in the street outside. For light, there was the open door, when the weather permitted, and a narrow

prison window, with iron bars and lozenge panes set in lead."

A single plank was fastened to the wall, all around the damp and dismal schoolroom. In the center was a chair without a seat, a blackboard, and chalk with which to write on it. Such was the equipment of the young untried schoolmaster who was expected to hold the interest of a large number of pupils.

A most discouraging class presented itself to this new teacher on the morning of his first appearance there. It consisted of fifty dirty, disorderly boys bent on mischief and getting the better of their new master.

Worse still, they could not work together because they were of all ages, from little fellows making their first acquaintance with a school room to big strapping fellows older than Henri himself. Upper primary indeed! It was a ridiculous title for a body of ungraded young scamps whose only desire in life seemed to be that of getting into as much mischief as possible.

How Henri speedily got order out of confusion must have been a matter of wonder to him in after years. But he was a "born teacher" and somehow the expression of his deepset black eyes and his calm, determined voice showed that he was absolutely unafraid. That settled the matter, together with the ability he promptly showed to interest the lads in other things than mischief.

His tongue was at first his only assistant—that and the chalk which he used freely in illustrating what he had to say. He talked in a way that charmed his listeners. He pictured vividly before those rough ignorant lads the things that opened up a new world to them.

At the best, however, his road was a rough one since the class grew steadily in size. After a while, to his relief, an assistant was given him to take charge of the younger pupils, and he managed to secure some tables so that his pupils no longer had to write on their knees as they had done at first.

When order and comfort had once been brought about the young schoolmaster asked himself, "What can I do to make the school still more attractive? I must plan something that will make the boys love to come to school."

And now the thought of the experiment in chemistry in which he had himself been so interested came to his mind. To be sure, it had failed. But it had been something out of the usual run of his school life and gave it zest.

"I don't know anything about chemistry," he considered. "But I can learn by teaching. In fact, that is the best way to learn. And, indeed, I will have as much fun out of the experiments I make as my pupils."

As we already know, chemistry was not generally taught in France in those days—at least in the ele-

mentary schools. But there was a small laboratory in the college where one of the professors worked with some of the students of the higher grades.

"Perhaps I can take my band of imps there," thought young Fabre.

But, sad to say, he was told that this would not be allowed, though in general he was permitted to do with his pupils as he wished.

Undaunted by the refusal, he quickly planned a way out of the difficulty. "I'll borrow from the laboratory what few articles I need for the simple experiments I propose to make," he said to himself.

It was not an easy matter to win the principal's permission for even this. But when he had pointed out the need of keeping this "upper primary" class interested in order to hold the boys in the school, he won his case. And forthwith, one day each week he was permitted to take from the laboratory the things he needed and set them up in his gloomy, cellarlike schoolroom.

"My first experiment shall be that which I saw fail at Rodez," he decided. "If I study the subject in a book of chemistry and then plan every step carefully it will be a success."

Notwithstanding his most careful arrangements he had moments of fear at the thought of the shrieks of agony of his fellow student when he had been almost blinded that day months before when things went wrong.

His courage returned quickly, however, as he

promised himself: "I will take the greatest care. Not a single boy shall be allowed to come near the table when I am making the experiment. Then, if there is an accident, I will be the only one to suffer."

The afternoon arrived when the class of curious students gathered for the expected entertainment.

When all were seated the young teacher commanded, "On no account are you to leave the benches where you are sitting till all is over."

The boys, filled with awe at thought of the unknown thing shortly to take place, had no need to be told twice. They sat so still that the fall of a pin on the floor might have been noted.

The silence was soon broken by an entrancing sound. The contents of the jar had become active. "Glo, glo," cried the bubbles of gas as they struck against the glass.

"Has the oxygen I wish for appeared?" young Fabre asked himself excitedly. "I will speedily find out."

Blowing out a candle which he had already lighted, he dropped it, held by a wire, into a test tube filled with the gas which he had obtained. The tip of the candle wick at the time was still red from the recent flame. On the instant the candle was once more alight. No more proof was needed that the gas in the tube was oxygen.

"What a great man is our teacher if he can work wonders like this!" thought his pupils. They were filled with admiration and amazement.

For young Fabre himself it was a proud moment. He was all aglow over the success which he had met in an untried field. But he must not show his feeling. His "sharp little rogues" would have lost their admiration for him had they known that this happening was not a mere commonplace one for their master.

Puffed up by his glory, he was not content to stop with that single experiment.

"Let us go on," he has written of that time, "as if chemistry were a familiar thing to me. Now comes the experiment with a steel ribbon, an old watch spring twisted into corkscrew shape and carrying a bit of tinder at one end. With this simple lighted bait, the steel should take fire in a jar filled with my gas. And it does burn; it becomes a splendid firework, with cracklings and a blaze of sparks and a cloud of rust that touches the jar. From the end of a fiery coil a glowing drop breaks off from time to time, shoots quivering through the layer of water left at the bottom of the vessel and embeds itself in the glass by suddenly melting it."

At sight of it, every one of young Fabre's pupils shuddered. Then all broke out into cheers, stamping their feet loudly at the same time, while some of the more fearful among them covered their faces and peeped out now and then through their fingers.

A marvelous teacher indeed seemed the master to his pupils that day. They felt it was a privilege to be in his class. And he? Well, he seemed to

himself to be taller by far than before he performed those simple experiments, and a much more important person in the world.

Only consider! two hours before he had been as untried as any of his pupils. Never had he performed an experiment.

That was a day ever to be remembered in after years as one of conquest, of the greatest good fortune, a day "worthy of being marked with a little white stone" as Henri Fabre wrote of it long afterwards.

But he was not willing to stop with this glorious achievement. There were other experiments to be tried, but only after the most careful preparation on his part.

For instance, he would make the flame from hydrogen leap up in a glass tube and afterwards cause a thrilling explosion of oxygen and hydrogen that would cause shivers to course down the spines of his admiring pupils.

And so on and on. Many of his boys, he considered, were to become farmers or factory workers when they left school. He could help as well as entertain them by his experiments, because through these they would learn the nature of different soils and become familiar with the common elements.

So, with light heart, he spent happy hours studying the books that would aid him in working seeming wonders, while his pupils' enjoyment of their school grew greater with each succeeding day.

Not only that! the report spread far and wide that there, in the upper primary school of Carpentras, was an unusual teacher who was almost a magician. In his classroom were no sleepy eyes and yawning mouths—the entertainment furnished there made such a condition impossible. It was not strange, therefore, that more and more youths applied for admission. Moreover, the principal, who had grudgingly consented to the young teacher's use of the utensils in the college laboratory, was now cordial towards his undertaking. The real reason for this was, no doubt, that the number of pupils who lived at the school was larger, and the principal's income was increased in proportion through the profits on their board.

During those days of good fortune for young Fabre, a youth about as old as himself came to him asking to receive lessons in algebra. He supposed that any one who showed such knowledge of that rare subject, chemistry, must be able to teach almost everything else.

Algebra! the mention of the word startled his listener. He knew nothing whatever about the subject save the name. But he must not let the student discover his ignorance, as he might lose his esteem in consequence.

But how was he to answer the request? The idea of teaching that of which he knew absolutely nothing seemed ridiculous—impossible!

While such thoughts rushed through his mind a

small voice inside was speaking in this wise: "Why not? One learns to swim by jumping into the water. So why not jump into the waters of algebra, and trust to yourself not to drown while striving to teach it?"

That small voice drove all fear away. Boldly, therefore, young Fabre said to the student after a brief pause:

"All right. Come day after to-morrow at five o'clock and we will begin."

What daring was in that seemingly calm answer! With only one day in which to study the subject he was to begin teaching, he must be prepared to show the way to another.

Fortunately, that day, Thursday, was the weekly holiday for the school.

"I will be free to study from morning till night," considered young Fabre.

Now, however, an unhappy thought pressed hard upon him: he had no book. But could he not buy one at the bookstore in the town? No, because algebras were not common in those days and the dealer did not keep on hand books that were rarely called for. Besides, even if there should be a copy in the store, he had not the money with which to purchase it. There were only twelve sous in his drawer—he knew, because he had counted them.

But he had given his word! What was he to do?

Now it was that he saw in his mind a certain library. It was in the apartment of the professor of

science in the college—the man who had loaned him what he needed for his experiments in chemistry.

"In that library I think I have seen a book on algebra," he said to himself. "But I won't ask the professor to loan it to me, because I must needs tell him the reason why I wish to borrow it. At hearing this, he would be sure to ridicule me for being so daring as to expect to teach the subject and, of course, he would refuse to let me take the book.

"What then? I will get it secretly. The key to my room is almost exactly the size of the professor's. With care, I can make it turn his lock."

The ambitious young thief, therefore, tiptoed to the science teacher's apartment when he had made sure of his absence. Both eyes and ears were on the lookout lest some one discover him.

His key was promptly put into the lock. To his disappointment it stuck there and the lock refused to turn.

But he would not give up easily—he now pressed hard upon it. At that the lock obeyed his will.

Opening the door, he made his way, knees trembling, to the book shelves where, to his joy, he found the coveted algebra, and hastily departed with the treasure in his hands.

Woe to him and his good name if he had been caught that day! Fortunately for him, he returned to his own apartment undiscovered and no one was thereafter to brand him as a thief for the act which

was not really an evil one if the young teacher were to be judged by his motive.

"Not a moment of this precious time must be lost," he said to himself, as he settled himself at his table with elbows bent upon it and the precious book of knowledge before his devouring eyes.

Hour after hour passed by in closest study. But would you believe it, he plunged first of all into one of the hardest subjects to understand in the whole algebra? There was no teacher, remember, to clear the way for him. He must depend upon himself alone. But he was brave and determined, and when the bell rang hours afterwards, telling that supper was ready below, he left his little room a conqueror. It seemed as if he trod on air, as he tripped down the stairs, while before his eyes marvelous wreaths of algebraic signs appeared to circle about him.

His pupil found him next day well prepared for the attack upon the unknown. Now it was that he showed himself an unusual teacher. As he helped his companion solve the problems given him, he led him by his wise suggestions to think he was taking each step by himself, instead of driving him like a slave master. Thus the work seemed play to the student who was made to think, "How delightful this new study is!"

All the time, moreover, the teacher had himself been learning.

"You understand," a voice within him seemed to say, "because you make some one else understand."

After the first lesson given in algebra the ones that followed were equally successful. To make this possible, many long night hours of study were spent by the young master who learned as he taught.

You can readily guess the outcome: in due time the pupil passed the required examination in algebra successfully. Meanwhile, his teacher had been adding to his own store of knowledge. Better still, his wisdom and strength of character had been increased.

As for the book that was secretly taken from the professor's library, it was returned without discovery and in due time young Fabre was able to purchase an algebra of his very own.

CHAPTER IX

A Great Discovery

"It is Thursday, and your time is your own. You find a quiet corner where there is a soft light, and you sit down at your table with a book open before you, your elbows planted one on each side of the book, and a thumb behind each ear. Your wits are wide-awake and your will is in complete command of your faculties. The outer world ceases to exist for you, the ear is deaf to all sounds, the eye blind to all exterior things."

In such wise young Fabre wrote to his brother Frederic, who had entered the Normal School at Avignon when he himself left it.

The two youths still loved each other as deeply as in the care-free days when they had hypnotized turkeys and robbed their neighbors' apple orchards. Since Frederic had always looked upon his elder brother as unusually wise, he was glad to receive suggestions from him while studying with the intention of following in his steps as a teacher.

So now he must have read earnestly that brother's helpful words.

"When you come to a hard place," Henri advised, "don't run to your comrades for help, for that would be only getting around the difficulty instead of over-

coming it with patience and thought. Besides, we really know only what we have learned for ourselves."

Young Fabre had already proved this for himself, as in his mastery of algebra, chemistry and, later on, of geometry and Greek. With no outside help to conquer more and more difficult subjects, he simply *would not be downed.*

What do you suppose was his yearly salary there at Carpentras? Not over seven hundred francs, or about one hundred and thirty-five dollars in American money! With it he must buy everything he needed outside of his room and simple board, besides giving as much money as possible to his parents who continued to have a hard time "making both ends meet."

There was nothing to spare for luxuries, as you may readily believe. Concerts, theaters, feasting, or entertainments of any kind were not to be considered for an instant.

Nevertheless, he spent many delightful hours with his pupils, sharing with them what they were able to receive of the knowledge he had gained in his studies.

He also had a class in open-air geometry, or surveying as it is commonly called.

"It will please my boys to go out in the fields with me on surveying excursions," he said to himself, chuckling, no doubt, at the idea of the fun they could have.

"Let me see," he considered, "I'll have to spend some money for a chain and compass and other tools needed in our work. And my salary is so small! But I can manage to buy what I need; yes, I'm sure I can."

The articles were forthwith purchased, and one May day a joyous band left the dark schoolroom and fared forth into the open country for a glorious holiday. The students vied with each other for the privilege of carrying different parts of the equipment, while their enthusiastic teacher, with secret pride, reserved for himself the honor of carrying the most valuable and delicate instrument of all—a graphometer that had alone cost five francs (about one dollar).

After a long tramp the party reached a wide, almost barren plain, where only wild thyme grew among the pebbles. Then operations began and "without let or hindrance" the boys proceeded to mark off difficult figures under the direction of their leader who was a boy with them for the time being.

Week after week the surveying trips were undertaken and gave continued pleasure for all. But during every excursion the bright-eyed teacher noticed that something curious—something he did not understand—took place. Often, when he sent a boy to set up a stake, the fellow stopped repeatedly on his way. At such moments he would bend over close to the ground, and then brace himself up while he

looked carefully about him. He did this repeatedly. Another lad, possibly, having been directed to measure an angle, would be seen busying himself in crumbling up lumps of earth.

Perhaps a third member of the class had been told to gather the arrows by whose guidance a line had been made. He would also prove forgetful of his duty and pick up pebbles instead of arrows. Still another would seem to have lost all thought of his errand; picking up a lump of clay he would proceed to break it up.

"Why do the fellows act as they do?" wondered young Fabre, as he discovered that nearly all of them gathered straws at one time or another and afterwards licked them.

"Tell me the reason you have been forgetting why we came here," he finally demanded.

The mystery was quickly solved when the boys pointed out to him some nests on the pebbly ground. They were the hives of mason bees.

"Try some of the honey stored there," urged the youths. "You can suck it out of the comb by using a straw."

No longer wishing to chide his pupils for losing sight of the purpose for which they had come to the field, Fabre joined them in their search. He was soon one of the gayest and busiest of them all in robbing the insects of their stores, and feasting on the honey which he discovered had a strong flavor.

At the same time he became on fire to learn more about the tiny creatures that built their nests in such strange places.

"They are very beautiful," he thought admiringly. "How rich is the deep violet coloring of their wings, and the soft velvety black of their bodies! I must certainly find out more about them."

With this in mind, he searched through his books of natural history as soon as he reached home, hoping to learn something about the bees he had seen. But he received no help there.

Then he sought a bookseller. This man, as it happened, had a magnificent volume on insects for sale, but a goodly sum of money was needed to buy it.

"Nevertheless, I must have it," Fabre said to himself.

At the same time he was forced to remember that his income was very, very small. A whole month's salary would be needed for the purchase.

"I *must* have it," he still insisted. "I can deny the cry of my stomach, but my mind shall not be starved."

The book was bought, and its happy owner returned to his home to devour its contents. While he pored over its fascinating pages, he learned not only the name of the bees he had watched building their clay hives but also read much about the habits of other insects. For the first time he became famil-

iar with the lives of men who had won renown for discoveries in the insect world.

As he read over and over what they had achieved, he seemed to hear a voice within him saying, "You also shall be of their company."

CHAPTER X

Trials Big and Little

While teaching in Carpentras, young Fabre met a girl named Marie Villard whom he came to love deeply. But his yearly salary was so small—still only seven hundred francs—that for a long time he felt he was too poor to marry her though she returned his love.

At length, however, when he was twenty-one years old, the two dared fortune and became man and wife. They set up housekeeping in a little home outside the town while the young husband still kept his position in the school. He continued to spend his spare moments in study, with one thought in mind: he must prepare to pass certain examinations that would enable him to obtain a higher salary elsewhere.

One day, as it happened, he was sitting at his window poring over a difficult problem, when boom, boom, dum, dum, dum! could be heard from down the street. Nearer and nearer came the sound, every minute growing louder till it became almost deafening.

Never had the young student needed quiet more than at that very time.

"A plague upon the Chinese Pavilion!" he cried

impatiently, as looking outside, he beheld a gay procession passing below. It was headed by a man beating a big bass drum, and accompanied by players on fifes. The procession was on its way to the Chinese Pavilion, as a tea garden only a few paces distant from the Fabres' home was called.

Up and down the public roads it had been traveling that peaceful Sunday afternoon, a joyful sight to the crowds who were gathered along the way to watch it.

The student within the quiet home quickly discovered what seemed to interest the beholders most. It was a tall pole adorned with ribbons, carried by a gayly dressed young fellow with a red sash about his waist.

There was good reason for the attractiveness of that pole, as Fabre concluded when he saw that the prizes shortly to be given out at the Pavilion were dangling from the end of the pole. Among them were silver candlesticks, packages of cigars, yards of rich silk, and a goblet of silver plate! The very sight of such treasures was sure to lead scores of people to invest in the lottery.

This was not the case with Henri Fabre! Nothing cared he for the trinkets he beheld nor even for the sight of the gayly dressed youths and maidens on their way to the tea garden to "pick up their heels in country dances" to the music of the fifes.

"This commotion is enough to rob one of his

wits," thought the irritated student. "I'll get away from it all as fast as my legs can carry me."

Grabbing his book together with paper and pencil, he fled from the home to a deserted field far from people and disturbing noises. The sun was hot, it was true, and the shade there was scant. What of that? Even though he might return home with a blister on his neck, he would not care so long as he should have mastered the difficult problems with which he was wrestling. Moreover, he did not lose sight of the fact that every conquest in his studies would bring him one step nearer his goal—the possession of knowledge which would not only enrich his mind, but would probably bring the mastership of a school where his salary would be greater than the present one.

During those years of poverty in Carpentras young Fabre had troubles of others to consider as well as his own. His parents were still struggling to make a living, and his brother Frederic sometimes quarreled with his sharp-tongued mother. It fell to the faithful older brother who was the real head of the family to do away with the ill feeling between the two by wise and kindly advice.

At such a time he wrote to his brother: "I know well there are little disagreements, but what of that? Forget them and do your best to put an end to all these miserable little quarrels. You will, won't you? I count upon it for the happiness of all."

Thus Henri the peacemaker showed his tender

thought for others and settled many a family difficulty while beset with trials of his own.

To begin with, he and his devoted young wife had to plan with the utmost care how to provide even the plainest fare for their children and themselves.

To make matters worse, delay after delay occurred before Fabre received his tiny salary. Sometimes long weeks passed without the arrival of the monthly installment.

"How shall we manage?" he often wondered, as he watched and waited in vain for the paltry sum that was to keep the red-jawed wolf of hunger from the door.

Sometimes the young schoolmaster cried out against his ill fortune. It seemed unjust to him that he was not called to a higher and better paid position! Through the most patient study he had passed with honor difficult examinations in mathematics and physical science. He had won diplomas for so doing. And yet—there he remained "teaching little brats to conjugate their verbs," as he declared indignantly. It was disgusting, ridiculous!

But this was not all he had to bear. In the midst of his trials the deepest sorrow fell upon him: death entered his household and snatched his first-born child from his arms. He had made great plans for this little son.

"What joy I will give him," he had promised himself, "in helping him to discover the wonders

of the world in which we live! Together we two will study the flowers and rocks, the birds and the tiny creatures of the earth. And in the knowledge books can give, my child also shall excel."

Now, almost in the twinkling of an eye, all was changed when the loved child was taken from his sight.

One thing alone comforted the devoted father: the belief that this dear son would never more know poverty. For him there would now be only happiness.

"For his sake," thought the poor schoolmaster, "I must bear my loss manfully." So he turned once more to his teaching and his study, the best medicines for his aching heart.

CHAPTER XI

The Beautiful Isle

The tide turned at last. After several good positions had slipped through young Fabre's hands, he was invited to go to Ajaccio, on the island of Corsica. He was to teach physics and chemistry there in what we would call a college preparatory school, and his salary was to be three times what he had been receiving. It seemed a royal one to him. What could he not do on a yearly salary of eighteen hundred francs! (about three hundred and sixty dollars in American money). There need be no more hungry mouths in his little family, and there would be comforts for wife and children such as they had never known before.

He found his new home a "paradise of glorious Nature." On every hand he beheld fresh wonders. He was no longer in a land of widespreading plains such as he had just left behind him on the mainland. Nor were there mere hills to gaze at as in his birthplace. Lofty mountains, whose summits were clad in snow and bathed in clouds, met his delighted eyes, and at his feet stretched the beautiful blue waters of the Mediterranean Sea.

Sometimes he turned in fancy to the time, ages before, when Corsica had been upheaved by a terri-

ble earthquake. At white heat mighty rocks had been flung from out the bowels of the earth. The waters, now so peaceful, must have risen in that long ago to mountain height, and every creature on sea and land must have met with sudden death. In imagination the newcomer saw eagles screaming in their flight high above that terrible scene of destruction and upheaval.

And now! all was still and beautiful, yet full of a wild grandeur, and Fabre could at last, after years of closest study and teaching, take time to enjoy the world around him. Many a merry walk he had with his pupils who came to look upon him as a friend and brother as well as teacher. He pointed out to their eyes the wonders in the tiny lives about them as well as in what he called "the chaos of rocks piled one on another in frightful confusion" in different parts of the island.

With his young companions he learned the nature of the plants growing about Ajaccio. With them he wandered along the seashore gathering shells. There was a great variety of these and many were very beautiful.

Not always with his pupils did he take such walks. He often went alone, spending whole days in making discoveries of things for which others had unobservant eyes.

On such tramps he would perhaps carry some bread with which to satisfy his hunger; and if no

fresh flowing stream was at hand he would try vainly to quench his thirst with sea water.

"I will write a book about shells," he promised himself. So deeply interested did he become in the subject that he wrote to his brother, asking his help in collecting shells and preparing the volume he planned.

He wrote other letters to his parents and brother describing the wild scenery—the giant mountains; the snows piled up in the chasms between them; the icy streams making their way down the slopes; the deep mountain lakes. In one of these letters he enclosed some leaves of the dainty immortelle found on the loftiest summits among the everlasting snow.

"You will put these in some book," he wrote, "and when, as you turn the leaves, the immortelle meets your eyes, it will give you an excuse for dreaming of the beautiful horrors of its native place."

Whenever at this time the writer thought of living again in a flat country, he felt that he would die of weariness there. For him there was no place that had the charm of his loved Corsica.

Into this quiet, happy life a stranger from the mainland came one day with a box under his arm filled with specimens. His name was Requien. He was the director of the museum and botanical gardens in the city of Avignon, and he had come to Corsica to collect specimens of the plants growing there.

Young Fabre soon found in Requien a chosen friend "proof against anything," so he declared. In

spare hours he took the greatest delight in going about with him as he added to his collection.

He found that Requien was never at a loss when it came to naming his discoveries. "A blade of grass, a pad of moss, a scab of lichen, a thread of seaweed; he knew them all," his willing student has written. And when, not long after the two became acquainted, Requien suddenly died, Fabre mourned his loss deeply.

At that time our young schoolmaster had not yet found his life work. But when soon afterwards Professor Moquin-Tandon appeared to complete the work begun by Requien, the way became clearer.

It so happened that when the distinguished professor arrived in the place he found that every room in the hotel was reserved for other guests.

Young Fabre at once invited him to share his humble board.

"You shall have a shakedown overlooking the sea," he told him. "For fare," he continued, "you shall have lampreys, turbot and sea urchins."

This offer sounded delightful to the man from the mainland, because it promised different food from what he had at home. The invitation was consequently accepted, and for the next two weeks his host seemed to tread on air as he went with the wise professor on one excursion after another. Afterwards the two would return to Fabre's humble home to talk over the discoveries they had made, as they

sat eating the simple fare prepared by Madame Fabre.

But what a feast for the mind the professor gave in return! He was brilliant as well as wise. Requien had known the *names* of things. Moquin-Tandon knew not only these—he was a poet who looked into the *heart* of things as well.

The observant professor had already noted the fire of genius that shone in Fabre's eyes.

"Leave your mathematics," he urged when he found that the young teacher was still studying this science. "Get to the beast, the plant; and if, as I believe, the fire still burns in your veins you will find men to listen to you."

The influence of the great man who was taking such an interest in him could not be resisted by his companion.

"I will give up mathematics," Fabre promised himself.

On the day before his distinguished friend was to leave Corsica, he was made to feel more strongly than ever that he had decided rightly. It came about in this way: he had returned home with the professor from one of their tramps, and they were nearing the end of their dinner. In the pause between "the fruit and the cheese" Moquin-Tandon, looking earnestly at his companion, said to him:

"You interest yourself in shells. That is something, but it is not enough. You must look into the animal itself. I will show you how it is done."

With these words the professor took a pair of scissors from Madame Fabre's workbasket which happened to be close at hand. He next took two needles, and made handles for them by sticking them into small pieces of vine shoot.

Having thus prepared his instruments for the work before him, he began to dissect a snail lying in a plateful of water. Part by part, he pointed out the organs of the snail to the eager watcher beside him. He made his explanations clearer by stretching the organs as he went on with his work.

"And that," so Fabre has written, "was the one and only and never-to-be-forgotten lesson in natural history ever received by me in all my life."

Before the coming of Moquin-Tandon he had made a little museum. In it he had placed his collection of shells, together with bits of rock which showed the work of the earthquake of long ago. And there was also a choice collection of old coins which he had discovered in his wanderings about the island. He knew that if those coins could have talked they might have told many a tale of the Romans who had lived in Corsica centuries before he was born.

But now his shells and coins did not interest him as deeply as before. He preferred to turn his attention to the animal life about him. Most of all, he was interested in the kinds of insects found in Ajaccio. He gathered many specimens of these which he proceeded to dissect with instruments of his

own making, as he had no spare money with which to purchase any.

"All the more fun for me," he thought, as like a mischievous boy he wrote to his brother, "My scalpels are little daggers that I make myself out of small needles; my marble slab is the bottom of a saucer; and my subjects are kept by the dozen in old match boxes."

Joyous weeks and months went by in which the young school teacher might often be seen tramping through the wild country around him, busily searching for rare insects. Most frequently he sought the marshes, because there they were most abundant. He had no fear for himself, either from the stings of a particularly poisonous spider which was dreaded by the natives of the island, nor from those of the countless mosquitoes that too often gave malaria to the human beings who came in their way.

As it happened, he was unharmed by the spiders. The mosquitoes, however, were not so forbearing since they gave him a wasting illness. He was seized by a slow fever which made him so weak that he finally decided, "I must ask to be sent to teach in some other place."

He added hopefully, "If I go where the air is dry I will soon be well."

No position, however, was open at that time, so he requested a leave of absence from Corsica.

The permission was granted him and he set sail

for southern France, in what was considered the fastest boat on the Mediterranean.

He expected to reach the mainland in eighteen hours, but unfortunately a terrible storm arose.

Great waves, mounting higher and higher, dashed furiously over the boat which drifted helplessly at their mercy. The sick passenger felt that his last hour was at hand.

"Nothing," he thought, "can withstand these raging waters."

Nevertheless, the death he expected did not overtake him and, three days and two nights after he had set sail, instead of the expected eighteen hours, the voyage came safely to an end.

With change to a dry climate on the mainland, young Fabre gradually regained his health and was able before long to return to his loved island to take up his old duties for a few months more.

Then a call came to him from Avignon in southeastern France to teach in the academy there.

The day of parting must have been a sad one to his pupils who had come to love and almost reverence their kind teacher who was leaving them. For him alone, of all their instructors, they had had no nickname. It was an unusual happening in those days as well as these.

CHAPTER XII

A Strange Battle

When Fabre reached the academy at Avignon he found a joyful prospect ahead of him: he was to teach physics and chemistry, subjects of which he was particularly fond. Moreover, he learned that the study of nature was considered worthwhile in the academy. This was joyful news indeed.

To be sure, his salary was to be somewhat less than that received at Ajaccio. But he did not worry greatly on that account. He was too happy in the thought that some of his teaching could be in the glorious outdoors and that he would have more time to study living creatures than ever before.

In a short time the new teacher had so aroused his pupils that they were as eager as himself to gather knowledge. Indeed, they were filled with such enthusiasm that their work seemed to them like play.

Often, however, on the "blessed Thursdays," as Fabre called these school holidays, he went off on long excursions by himself to study what held most interest for him—the world of insects.

By this time he had come to feel that it is not enough to know the names of things. Neither was he content to tear apart the bodies of the tiny crea-

tures in which he took interest, to learn about their various organs. He wished to go much further: he would study the ways and habits of his living insect brothers. He would find out how they hunted their game; how the mothers cared for their babies; how they built their homes; how they defended themselves against their enemies. The stars high overhead made one feel the wonder of creation. But so, young Fabre was sure, did the ant, the bee, the wasp, the spider, if one only understood their life.

"To me they are equally worthy of study," he would have told us. And he would, doubtless, have added, "Though most people still believe that the study of God's tiny creations is time foolishly spent, I will yet show them it is worthy of the greatest minds."

Fired with zeal, he sometimes tramped on free days beyond the town. Perhaps he would cross the River Rhone to visit a tableland on its other shore. Though this tableland was dry and barren, it had interest for him because it was the home of countless insects.

Or again, he would follow the river till he came to a spot where there were big bare places between clumps of dwarf oaks. There, in midsummer, the sunshine beat hard upon the earth and the traveler must needs suffer from the intense heat.

Nevertheless, Fabre went there often because it was the home of the digger wasps and others of his favorite insects.

He would spend a whole day, perhaps, patiently watching the mason bees to see how they stored their honey. Or perhaps, lost to everything else that was happening around him, he would try for hours to discover the way in which a scorpion made love to his mate.

No books that had been written could tell him the many things he wished to know. In the best ones he had read, he might possibly learn how many veins there were in a particular insect's wing, or how many hairs grew on its abdomen. But the knowledge of such things did not bring him any nearer an understanding of the *life* of the creature.

Fabre now saw clearly that he could not reach this understanding through the examination of any number of insects' dead bodies.

"An insect is caught," he has written, "a pin is thrust through it, then the pin is stuck into the cork bottom of a little box and under the feet of the specimen is placed a small card bearing a Latin name; and that ends the chapter for that insect."

This kind of study, he went on to explain, did not satisfy him—he must seek the creature alive and acting freely according to its nature.

To do this he often bore the greatest discomfort; as for instance, in midsummer heat he would lie for a whole afternoon among the dwarf oaks on the burning plain already mentioned.

"If I don't take care, I'll get a sunstroke," he had to admit to himself.

So, before starting on one of his expeditions, he generally armed himself with an umbrella. Woe to him if he forgot it! In such case, the only thing left for him to do when he reached his study-ground would be to lie behind a protecting hillock of sand. If the heat there became so great that his temples seemed ready to burst, he would stick his head into some rabbit burrow to get what little relief that offered.

Don't imagine that he was allowed to feel lonely at the times when he was shaded by his umbrella because many gadflies seemed to find his company pleasant and sought the shelter also. Clinging to the roof of the umbrella, they made an attractive sight to the man below them when he had nothing outside to watch. He was amused by their big yellow eyes, and their manner of moving solemnly about when seeking a cooler spot on which to place their feet.

On one such day of burning heat something happened that proved exciting as well as amusing to our nature student. Into the silence came a loud noise. It was the sudden bang, bang, on the umbrella covering!

"Perhaps an acorn dropped from an oak tree on the umbrella," considered Fabre.

On the instant came more bangs. Quickly and sharply they followed each other.

"Can some practical joker have come to disturb

my solitude and flung acorns or little pebbles at my umbrella?" now wondered the man beneath it.

He rose softly and went outside to look about him. He found only peace and quiet there.

"Then what *can* be the cause of the banging I heard?" he asked himself.

Creeping back under his umbrella, he looked above him. The riddle was solved at once. There, before his eyes, were a bold company of hunting wasps! They were busily attacking the gadflies which, it seems, were their favorite prey. A few minutes before, the gadflies had been dozing peacefully with no sense of danger, and had been aroused too late to flee from danger. The interested watcher sat motionless as the battle raged on over his head. It was brief but bitter. One wasp after another came flying past him and darted with lightning speed to the silken roof overhead. Almost as quickly as Fabre drew his breath the struggle between a wasp and its chosen victim began and ended, and the cruel hunter flew away with its helpless prey held close between its legs.

That battle was never to be forgotten by the eager student of nature. But ahead of him were countless other adventures equally exciting. He was ever on the watch for them.

Perhaps he was walking along the road, bound on some important errand, or making a call on some acquaintance—if he caught sight of an insect, that was enough to make him forget everything else.

Otherwise he might have lost a chance of learning something new about its life.

No doubt, in those days when he was still an unknown young teacher, his friends must have secretly smiled over his curious interest in the life of a fly or hornet which to them seemed so insignificant.

The mention of a hornet brings to mind the story of something that once happened in his home and shows the kindness of his heart. It was washing day and a fire had been kindled in the fireplace for the heating of water that would be needed.

All at once the master of the house noticed a potter wasp entering the room. She had a tiny ball of mud between her jaws which she carried to a partly built nest behind the breast of the fireplace.

No longer could Fabre take interest in the completion of the washing. His only concern now was for that busy wasp.

"The little creature shall not be hindered in her work by the smoke," he thought sympathetically.

Accordingly he spent the next two hours in keeping the fire burning as low as possible while he watched the wasp go after more mud pellets and continue the building of her nest.

At another time when he happened to be in the farmhouse of an acquaintance at dinner time, he again had a chance to watch some potter wasps building their nests.

One of the farm hands, as it happened, had hung his smock, and another his hat, on pegs in the wall

of the room, before sitting down to eat. Shortly afterwards some wasps appeared. Evidently they decided, "What good places the hat and smock will be for nests!"

Forthwith they started building, and by the time dinner was over, had done considerable work. Unfortunately for them when the farm hands took down their clothes from the pegs, they gave them a good shaking. The wasps' patient labor had been useless!

"I could not have acted like those men," thought the visitor. "I would gladly have let the wasps finish their building. Then I could have continued to watch to see how long their homes would last, built in such shifting places."

As time passed by Fabre learned that wasps built their nests wherever they could find places that were dark as well as warm. Once he discovered such nests on the top of a steam engine in a silk mill. Again, he was much amused when he spied a nest inside of a gourd partly filled with shot, hanging in a farmhouse kitchen. The farmer had placed the shot in the gourd, believing they would be undisturbed there.

One day when Fabre was away from home on an exploring trip he found himself on a narrow sandy path following the course of the Rhone River. On one side he could watch the beautiful, smoothly flowing stream. On the other, osiers and willows formed a dense thicket.

All at once his attention was attracted by a strange sight. It was a yellow-winged wasp that came hopping along over the sand, dragging its prey after it.

"What do I see?" Fabre has written of this discovery. "The prey is not a cricket, but only a common locust, and yet its captor is surely the digger wasp so familiar to me, the yellow-winged, digger wasp, the zealous hunter of crickets. Scarcely can I trust the evidence of my senses.

"The wasp's burrow is not far away. The insect goes in and stores its booty. I sit down and make up my mind to wait for the wasp to sally forth on another hunting expedition. I am resolved to stay there for hours if need be, so that I may see if the extraordinary capture is repeated."

To the distress of the watcher his quiet was shortly interrupted by the approach of two conscripts whose jerky gait showed that they were new to a soldier's life. They were carelessly scraping bark from willow switches they had cut. At the same time they were talking to each other, so Fabre imagined, of their homes and sweethearts.

He was seized by a sudden fear. "Suppose," he said to himself with sinking heart, "one of those fellows steps on the wasp's burrow!"

To prevent such a mishap, he sprang to his feet and drew back among the osiers to make room for the men to pass.

He had decided that he could not do more than that. If he had said, "Please don't step there," he

would have made them think there was some trap covered by the sand. And then they would have stopped and asked questions, and perhaps stayed on with him when he so much wished to be left to his solitary watch.

To his disappointment, the thing he most dreaded came to pass: down came the heavy boot of one of the soldiers directly upon the roof of the wasp's burrow.

"A shudder runs through me," Fabre has told us, "as if I myself had been trampled on by the hob-nailed footgear."

In consequence, the hoped-for knowledge was lost to the patient searcher and he went home to consider the difficulties in the way of one who wishes to learn from nature. He must choose the right season, the right time of day. And even then he must watch and wait, watch and wait, often in the most trying weather and most uncomfortable position, for the chance that might not come even then to reward him.

"How much more fortunate a chemist is than a naturalist," he said to himself. "He can withdraw at will into his laboratory. There, with needed implements close at hand, and with no one to disturb him, he can work out his experiments at his own will at any time it pleases him."

CHAPTER XIII

What the Bees Told Fabre

"Dare I do it?" thought Fabre.

It was a hot summer's day and the searcher was making his way along the narrow "Sunken Road," whose banks on either side had been baked hard by the strong sunshine.

He had sought the place because myriads of flying and creeping insects were certain to be there having adventures, and he wished to become acquainted with them.

Hunting wasps and their prey, the innocent crickets, were to be seen in plenty; but for once Fabre had no eyes for them—his chief interest for the time being lay in a swarm of bees that were "dancing a crazy ballet" close at hand. Quick as flashes of lightning, hundreds of the bees kept darting away from the swarm to scour the country near by for honey and for clay with which to build nests. Other hundreds were constantly returning, laden with their precious booty.

The man who was watching them was filled with longing to venture into the heart of the busy, buzzing swarm.

"What an opportunity," he thought, "to make discoveries!" Yet fear possessed him for a moment

as the memory popped into his mind of past experiences with hornets, when angry stings had been the only outcome.

And so, "Dare I do it?" he asked himself, as stabs from countless bees rose in his imagination.

He realized that he had no way of protecting himself for his undertaking. He had no mask, no gloves even.

Yet the answer came promptly. "Yes, I dare. I may go home with my face so swollen that my family will not know me. But now, this very day, I will solve a problem regarding bees that has been puzzling me for a long time."

With the idea, therefore, of "nothing venture, nothing have," in his mind, he buttoned his coat tightly about him so as to leave as little of his flesh as possible open to attack. Then he plunged into the very heart of the swarm.

The humming of the insects rose instantly to "concert pitch." But the angry sound failed to stop the intruder. Now then for prompt action! With the club he had brought with him he struck several sharp blows at the partly built hive, bringing away a lump of mud.

With this in his hand he fled with all possible speed, expecting that a cloud of angry bees would follow him. To his astonishment, he found this did not happen. Still more remarkable, he was not suffering from a single sting.

"Are these mason bees cowards? Have they no

spirit?" he asked himself, while proceeding to examine the fragment of their hive which was in his possession.

To his disappointment he found it had been so near the surface of the hive that it did not contain the kind of cells he wished to study.

A second time, therefore, he ventured into the midst of the swarm, with all fear now vanished. The outcome was like that of his first visit—not a single bee attacked him.

After that he felt perfectly safe in seating himself on a stone with the bees close about him on every side, and settling himself there to observe what was going on.

Hours passed in which he remained in that position, gradually breaking away lumps of earth containing cells. The honey which had been stored in them through the bees' patient labor flowed out in wasteful streams upon the ground.

In the meantime, some of the insects that had continued busy inside the hive were crushed to death by the blows of the workman, while the anger and sorrow of the others over the loss of their precious property showed itself in continued distressed humming as they watched the work of destruction.

From time to time peasants living in the country around passed by. When they saw the nature student sitting quite at his ease unharmed, with the bees swarming about him, they were filled with amazement.

"Have you bewitched them?" they asked him, thinking he had discovered some magic charm which made the insects unable to sting him.

We can imagine him chuckling merrily as he shook his head and they went on their way, still wondering what was the nature of his power.

For his part, he knew well that the only magic he possessed was that of keen observation. The mason bees, as he had just found out for himself, were not as wise as their relations, the bumble bees. The foolish creatures did not know *how to defend themselves*—that was the one and only secret of their harmlessness to mortals.

Sometimes, as in his visit among the bees, Fabre spent hours in one spot watching some happening in the insect world that might give him important knowledge.

On one such occasion he had settled himself at daybreak on a stone at the foot of a ravine. He wished to learn something new about a certain kind of wasp he was studying.

Soon after he was seated three women passed by. They were vine pickers on their way to their day's work. They gave a passing glance at the man below them who seemed to be lost in thought, and went on.

The sun rose higher and higher in the heavens. Noon came, and the silent watcher was still sitting quietly on the stone.

The sun began to descend in the sky. The air

became cooler. Still he remained in the same position, for his lesson was not yet learned.

The hour of sunset was at hand, and steps could be heard drawing near. The three women who had passed by in the morning were now on their way home with the fruit gathered during the day piled in baskets poised on their heads. To their surprise they noticed the man whom they had passed in the morning in the selfsame spot where they had seen him in the early morning. Something was surely wrong with his mind! At least that was what these peasants believed. And so one of them, pitying him, turned to her companions and said to them in low tones, "Poor fellow! a poor innocent!"

The three, like good Catholics, hastened to make the sign of the cross on their breasts. Then, going on their way, they left the harmless idiot, as they believed the man to be, to the mercy of God.

Fabre had caught their words, and for a moment felt bitter. It seemed to him that those ignorant women stood for the whole world. Others also, he thought, must consider that any one who labored to understand the life of insects must have lost his reason.

The next moment, however, he thought only of the kindness in the women's hearts. They had no scorn for an idiot—only tender pity. So now he could smile at being called "a poor innocent."

You shall next hear of a time when his long watch in one spot was misunderstood to his great discom-

THE THREE VINE PICKERS THINK FABRE
"WRONG IN HIS MIND"

fort, and he was taken to be a dangerous person. The constable, who was ever on the lookout for poachers in that part of the country, had seen Fabre now in this place, now in that. Apparently he seemed to be wandering about, doing nothing in particular. Moreover, he often carried with him a box in which to put the interesting specimens of plants and flowers he discovered.

"Hm!" thought the constable. "This man whom I meet so often must be either a tramp bent on some kind of mischief or an idiot. I'll look out for him."

Fabre, for his part, had come to the conclusion that the constable considered him a doubtful character.

"I'll not give him any reason for pouncing on me," he said to himself. "No, I'll not even pick grapes from any vine I may be passing, no matter how thirsty I may be. In no way, not the slightest, shall that man find me breaking the law."

One day, however, fortune seemed to desert him. He was lying stretched out on the ground busily watching a digger wasp in her home. His whole mind was bent on learning the mysteries of her housekeeping when he was suddenly aroused by the sound of a stern voice close to his ear.

"In the name of the law," said this voice, "I arrest you."

It was the command of the constable who had been watching him for weeks past. Though he had not discovered Fabre poaching rabbits on any one's

property, or doing anything else forbidden by the law, he was "eaten up" with curiosity as to what this quiet wanderer was doing.

"I'll order him to court," the officer decided. "Then we'll soon know what he is about."

For the moment Fabre was not able to see anything amusing in being arrested. He endeavored at once to explain the reason of his stay beside the wasp's home. Unfortunately, the more he talked the less ready the stupid constable seemed to be to believe him innocent in his purpose.

"Bah!" he burst out, so Fabre has told us. "Never try to make me believe you come out here and roast in the sun just for the fun of watching flies. I shall keep an eye on you; mind that! And if you don't look out for yourself—well, you are warned."

The officer of the law then went away; but the nature lover always believed that it was not his explanation that gave him freedom. It was a certain badge of distinction, a red ribbon, pinned to his breast which the officer saw there. In that red ribbon lies another story which you shall hear later. Just now, however, you shall learn how Fabre became positive that the life of insects furnished for him the most fascinating study of all living creatures.

One evening—he was then thirty-one years old—he chanced to read a paper written by the celebrated

scientist, Léon Dufour. Before he had finished the article, his mind had been set on fire.

"I must look into this matter," he said to himself as he thought over what the great man had written. "What he believes is the right explanation does not seem possible."

This is what had aroused Fabre's questioning: Dufour had described a visit to a wasp's nest in which he had found some small insects. They appeared to be dead; yet they continued fresh and of their natural color in life day after day.

These insects had evidently been brought to the nest by the mother wasp to furnish food for her newly hatched children, tiny, helpless larvæ. Bit by bit they were devoured, the vital organs being eaten last of all. To the very end there was no sign of decay.

"Why is this?" Dufour had wondered. "Without doubt the insects were dead when I first saw them. Yet why did they keep so fresh during the long time in which they were being eaten?"

At first he could think of no possible explanation. At last he hit upon this one: when the mother wasp had stung her prey, she had injected into them something to keep them from decaying so long as the larvæ would need food. In other words, she had embalmed the insects.

Fabre, as already stated, did not feel satisfied with this solution. He determined to solve the

problem for himself, and set about doing so as soon as possible.

What do you think he found was the most reasonable explanation after long and careful study? Just this: that the wasp had stung each of her victims in a certain nerve center, causing it to be paralyzed. Somehow or other she felt that her babies must eat only fresh food if they were to thrive. So she acted in the only way to make this possible.

As Fabre worked out the problem he decided that the greatest students of insects—we call them by the long name of entomologists—did not as yet know much about their subject. More knowledge was needed, far more knowledge, about the animal kingdom if men were even to get a glimmer of understanding of what we call *instinct*.

"It is most wonderful," considered Fabre. "Human beings have minds so they are able to think out why certain things are done and how to do them. They construct wonderful cathedrals. They build marvelous bridges. They make steam do their bidding and drive immense ships across the ocean and trains across the continents. It is because they possess individual minds that they can become masters of nature and can plan and execute such great achievements.

"On the other hand, the creatures of the animal world have no minds of their own. Yet they do equally noteworthy things. They fight in organized battles. They build homes according to the most

complex principles of mathematics. They show almost unbelievable wisdom in the care of their little ones. These and other things quite as marvelous men sum up under the name *instinct,* and their interest seems to end there."

After the naturalist had thought deeply in such wise, he made this vow: "Henceforth I will make insects my life study because there I can best watch instinct at work."

CHAPTER XIV

The "Crocodile's" Visit

Fabre had long days of happiness tramping about the country in search of insect adventures. Yet these adventures could only take place on the free Thursdays and Sundays and occasional holidays. For the most part, his time was devoted to his classes and to his tutoring students who needed special help outside of regular hours.

He was glad to do this tutoring because it brought him small sums of money to add to his pitifully small salary. By this time there were five children in the family—Antonia, Aglâe, Claire, Emile and Jules. With seven in the household, therefore, to support, Fabre needed every mite he could obtain by teaching.

He must have been a careful planner and not allowed one golden minute to be wasted, because he managed to secure hours for study even in this busy life.

"I will yet be a professor of natural history in a university." This was the constant dream which kept his heart light and full of hope.

"When I reach the goal," he told himself, "I will have more leisure. Then I can devote myself more fully to learning what nature has to teach me."

He knew well that several difficult steps must first

mounted: he must win certain degrees which ould mark the attainment of knowledge needed to ensure advancement.

So he worked faithfully month after month, year after year, till the prizes were won and he began to breathe freely.

In the meantime he had written some articles on his discoveries in the insect world which publishers were glad to print. As soon as they read them they felt that Fabre was an unusually fine writer. His style was clear and simple. His choice of words showed rare understanding. The pictures his pen made were vivid. Though the stories that he wrote were true, they were as interesting as the most exciting fiction.

Perhaps those readers who knew of his life wondered how this man who belonged to an ignorant family of peasants and had largely educated himself had learned to write so well.

Fabre could have explained how this had come about. Do you remember Moquin-Tandon's visit to Corsica? Do you also remember his leading Fabre to take deeper interest in the animal world than ever before?

Moquin-Tandon, as it happened, wrote in a superior style which impressed the observant young school teacher who then and there, it is said, decided to train himself in the art of writing.

What was the outcome? Success met him at the

very start, since his writings instantly won the attention of French scholars.

One day, as a result of this, he had a surprise that almost "took him off his feet." He was in the schoolroom at the time, busily teaching geometrical drawing when who should appear but Rollier, the inspector general and distinguished professor of mathematics. Fabre's fellow teachers had nicknamed this professor "The Crocodile" because he was rough and cold in his manner, showing so little kindness and courtesy that he was regarded with fear instead of affection.

Fabre, however, was not disturbed in the least by the entrance of "The Crocodile." When the recitation came to an end the students left the room and the shabbily dressed little instructor found himself alone with his dignified, finely garbed visitor.

"What shall I do to entertain him," Fabre wondered for a moment.

Then, remembering that Rollier was "said to be smitten with geometry," he got out his portfolio and, opening it, displayed the drawings of a talented youth in his class. It was work that showed unusual ability. Any teacher might well be proud of a pupil who could execute it.

The young teacher proceeded to point out the fine points in the drawings. To his astonishment, his companion scarcely looked at them.

His heart sank as he thought, "A storm is about

to burst over my head. I must have done something wrong."

Then, no doubt with a sigh, he decided within himself, "It's your turn now for a bite from the 'Crocodile.' "

Not so! To his amazement the great man began all at once to be agreeable. Seating himself astride a bench, he requested Fabre to take his place beside him.

Then, of a sudden, he began to ask questions about his companion's fortunes.

"Have you any money?" he said, so Fabre wrote in his account of the interview.

The only answer was a smile.

"Don't be afraid," Rollier went on. "Confide in me. I'm asking in your own interest. Have you any means of your own?"

To this Fabre replied simply that he was obliged to confess he had no income whatever except from his small salary, but that he was not ashamed of his poverty.

On hearing this Rollier scowled. At the same time he muttered, as if to himself, "That's a pity, a great pity."

Fabre was amazed that such a great man who was believed to have a hard heart showed sympathy for him because of his being so poor.

"Why is this?" he managed to ask.

Rollier only repeated the words he had said before, "Yes, it is a great pity."

He went on to say that he had read articles Fabre had written which showed him to be unusually observant. Moreover, he wrote vividly. After giving him such praise, he continued, "You would have made an excellent university professor."

"But that is exactly what I wish to be," Fabre declared earnestly.

"Give it up," was the prompt reply.

"Do you mean that my scholarship is not up to the standard?"

"No, no," Rollier replied emphatically. "Your scholarship is all right, but you have no private means."

The really kind-hearted professor went on to explain why he advised Fabre as he did. He spoke from his heart as with great feeling he laid bare his own life. Years before he had had great trials in being a university professor without an income sufficient to allow him to fill the position with dignity. He would not advise any one else to suffer as he had suffered.

As the professor said this, Fabre realized that he spoke wisely. He knew only too well that his country did not appreciate learning properly. Men had to teach for the love of their work because even the greatest professors had ridiculously small salaries.

It seemed to the ambitious young teacher as if his heart would break when he was forced to face the unpleasant truth in its full light. Nevertheless, he thanked Rollier heartily for his interest.

"You have done me a great service," he told him. "I will hesitate no longer. For the present, I will give up my plan. I will first see if I can get together the small fortune I shall need if I am to become a professor."

The visit ended with a kindly handshake and Rollier went his way, leaving Fabre to comfort himself as best he might by making a new plan for his future.

He did not wait long before doing this.

"I will yet succeed in rising above poverty," he promised himself. Thereupon he began to study industrial chemistry. With extensive knowledge of that, he felt sure he could produce something that would be of use to the world.

"Farmers hereabouts," he considered, "bring madder to the factories of Avignon, where different products are obtained from it. I will use the vats and furnaces here in our laboratory in extracting a coloring substance, alizarin, from the roots. From that I can make a fortune. And then my dream shall come true. I will yet be a free man!"

He set patiently to work. His plan was to find the way to extract the pure alizarin from the roots of the madder in such a way that it could speedily be put to use. Disappointment followed disappointment, however, in his efforts. Yet he struggled bravely on.

While still working on his problem, a distinguished visitor rang his doorbell one day. It was none other than the noted scientist Pasteur who was

later on to be called "the greatest Frenchman of his time."

The poor schoolmaster had heard of what Pasteur had already accomplished to make himself famous. Chief among these achievements had been his discovery that life does not develop where there is already no life. He had proved, furthermore, that disease is caused by the presence of unfriendly living germs.

Fabre, realizing that Pasteur was a great man, was pleased to welcome him in his home. At the same time he was wondering, "Why has he sought me, an almost unknown teacher?"

Pasteur was quick to explain this: he was traveling about through the country around Avignon to learn everything possible about the culture of silk because of the unfortunate condition of the peasants of southern France who raised silkworms. Some of them were in great need. An unknown disease had been attacking the silkworms and causing the death of countless thousands of them.

"Will you study the nature of this disease?" Pasteur had been asked. "Perhaps you can learn how to stop its spreading any farther."

Though he knew nothing at the time about the culture of silkworms or the cocoons they made he started in on his task, determined to do his best. "I will leave no stone unturned," he thought. So when he learned that Fabre was a teacher of entomology at Avignon, he decided to call on him. It

was possible that he might give him information that would help him in the discovery he hoped to make.

There was a short talk between the two men about the silkworm industry. Then followed the conversation that Fabre afterwards vividly described.

"I would like to see some cocoons," said Pasteur. "I have never seen any. I know them only by name. Could you get me some?"

His host replied cordially: "Nothing easier. My landlord is himself a dealer in cocoons and he lives across the road. Just wait a moment and I will bring you some."

The next instant Fabre was on the way to his landlord's home where he was permitted to stuff his pockets with the desired cocoons. Then he hurried back to his own home to give them to his guest.

Pasteur, taking one in his hand, turned it over and over curiously. Then he lifted it to his ear and shook it.

"It rattles!" he cried. "There is something inside."

"Surely," was the answer.

"But what is it?" persisted Pasteur.

"The chrysalis."

"What's that—the chrysalis?"

Fabre immediately explained that it was what the caterpillar became before turning into a moth.

Pasteur next asked if there was a chrysalis in every cocoon.

"Of course," replied his companion, who went on to say that the silkworm spins the cocoon for the protection of the chrysalis.

When the talk ended Pasteur put the cocoons in his pockets to study them by himself when he should have plenty of time.

"An unusual man is this," thought Fabre as he watched him. "He is completely ignorant of everything connected with silkworms. And yet, knowing absolutely nothing even about the cocoons they spin, he has set himself to discover the nature of the disease that attacks these in order to conquer it. This, too, when other scientists have been studying the subject for years, in vain!"

In fact, Fabre has told us that he was not only astonished but stupefied at such daring.

Pasteur's example had this effect upon him: it led him to depend upon himself more than ever.

How had he already learned so much about the world of nature around him? Little indeed from the teachings of scientists or from books! It had been through the use of his own magic power, keen observation. If Pasteur could succeed he felt sure that he also could succeed.

"There is no way to learn what I wish," he said to himself, "equal to that of going straight to my subject, instead of striving to get needed information through books. If I face it, it will speak to me directly, and I will not start with the possibly mistaken ideas of other students."

As soon as Pasteur had obtained all the information his host could give him about silkworms, he asked Fabre to show him his wine cellar.

Do not imagine that he said this because of his love of wine and a desire for a refreshing drink. He had a far different reason in his mind; he was making a study of the ferments found in wine and beer which he believed could be improved through the action of heat. We must also bear in mind that large quantities of grapes were raised in southern France. Hence an abundance of so-called "light" wines was made that were sold so cheaply even peasants could afford to keep a supply on hand for daily use.

Fabre, however, was too poor to afford even this small luxury. So, when his visitor asked him to show him his wine cellar, he suddenly felt abashed.

Listen to his own words about himself at that time: "To show him my cellar! My private cellar! As I, poor wretch but a while ago, with my pitiful salary could not even allow myself the expense of a drop of wine, so that I used to make myself a sort of rough cider by putting some brown sugar and grated apples in a jar, to ferment. My cellar! Why not my hogsheads of wine, my dusty bottles labeled with the special brand and the year of its vintage! My cellar indeed!

"Much confused, I tried to evade his request and tried to change the subject. But he persisted.

" 'Show me your wine cellar, I beg.'

"There was nothing to do but to grant his request. I pointed with my finger to a corner of the kitchen where there stood a broken down chair and on the chair a jug holding two gallons.

" 'There's my cellar, sir.'

" 'Your wine cellar, that?'

" 'I have no other.'

" 'Then that is all you have?'

" 'Alas, yes. That's all.'

" 'Ah.' "

That was all the distinguished scientist said. His tone of voice did not express the slightest sympathy. It may be that he was so amazed at what he had heard that words of sympathy would not come. It may be he did not even understand the sad story told by the old jug and broken down chair that spoke so plainly of the bitter poverty of a brave and determined man. Otherwise Pasteur's seemingly hard heart that day is hard to explain, because he was wont to show tenderness and sympathy towards the unfortunate wherever he met them.

CHAPTER XV

Hopes and Fears

"He is like a ray of sunlight." So Fabre felt about another person of note whom he met not long after Pasteur's visit. Pasteur had left behind him a sense of chill. The second man so warmed the heart of the struggling school teacher that when he had once heard him speak, he longed for his friendship.

It came about in this way: the young teacher was busy in his classroom one day when two inspectors appeared to examine the work of the school. One of them was concerned with science and the other with literature.

After these two important guests had finished their examination the teachers were directed to gather in the principal's drawing-room to receive advice from the visitors about their work.

The first inspector, the man of science, was cold and uninteresting in his talk.

But just as soon as the second one began to speak, Fabre said to himself, "Oho! this is very different."

No longer was it hard for him to listen. It was a pleasure, a treat such as he had never enjoyed before.

All too soon the address came to an end and the two inspectors went away.

"If only I might come closer in touch with that second speaker!" thought Fabre, as he asked of his fellow teachers the name of the man who had won his heart.

"Victor Duruy," was the answer.

With the picture of this eloquent and brilliant inspector stamped on his mind, Fabre continued his work of spare moments—the invention of a process of extracting dye stuffs out of madder.

Months passed without his attaining his object, yet he hoped on.

"When success comes," he promised himself again and again, "my poverty will be at an end. I will then have so much money at my command that I can afford to accept the small salary of a university professor."

So he persisted, strong in courage, though he met with repeated discouragement.

One day, two years after Duruy's never to be forgotten visit to Avignon, Fabre was busy in the school laboratory. The air, filled with steam rising from the boiling liquid in the vats, enveloped him. His hands were "the color of boiled lobster claws," as he wrote afterwards, from repeated dipping in the deep red dye.

Little thought had he for anything but his fascinating work when there came a sudden interruption. The door opened, and there before him was

the face of a man that seemed strangely familiar.

"Who is this visitor?" he wondered.

On the instant the answer leaped to his mind. It was none other than M. Duruy, the inspector general whose words and manner had so deeply impressed Fabre on the occasion of his visit to the school long before.

Since then changes had taken place in the inspector's life. He had become Minister of Public Instruction, and was in close touch with the Emperor. People now addressed him as "Your Excellency." He had shown himself worthy of every honor conferred on him and had remained untouched by the praises heaped upon him. "The workers' minister" he was called, because he showed interest in the most lowly people.

"I want to spend my last half hour at Avignon," said the visitor as he smilingly came up to Fabre. "It will be a relief from the official bowing and scraping."

At that the abashed experimenter made haste as best he could to apologize for his coatless condition, and for his stained hands which he held behind him.

"You have nothing to apologize for," the truly great Duruy instantly replied. "The working man never looks better than in his overalls with the marks of his trade upon him. Let us have a talk. What are you doing just now?"

Fabre, put at his ease, could now easily explain

what he was striving to obtain. He went on to print something with the dye that he had been making. He also showed the apparatus he used.

Duruy must have been amazed at sight of the steam chamber which his companion had devised. It was simply an evaporating dish which was kept at boiling point under a glass funnel.

"This man needs a better equipment than what he has," he must have thought, because he immediately declared he would help him.

"What do you want for your laboratory?" he asked.

"Why, nothing, your Excellency, nothing!" came the prompt reply. "With a little managing I can make my outfit suffice."

At these words the Minister was evidently more amazed than ever. He declared that Fabre was like no one else he knew. Other people, he said, overwhelmed him with requests while his companion, a poor man, refused his offers.

"There is one thing which I will not refuse," was the answer.

"What is that?" demanded Duruy.

"The great honor of shaking hands with you."

Then, according to Fabre's account of the interview, he replied cordially, "It shall be as you say, my friend, and a most hearty handshake. But that's not enough. What else do you want?"

Fabre's eyes must have twinkled as he answered, "The Jardin des Plantes at Paris is under your con-

trol. Should a crocodile die, let them keep the hide for me. I will stuff it with straw and hang it from the ceiling. Thus adorned, my workshop will rival the wizard's den."

Looking around the laboratory and then up at the high ceiling, Duruy replied, "Yes, it would look very well."

As he spoke, he laughed at the joking request. Then he went on: "I now know you as a chemist. I knew you already as a naturalist and a writer. I have heard of your little animals. I am sorry that I shall have to leave without seeing them. They must wait for another occasion. It is about time for my train. Come with me to the station, will you? We shall be alone and can talk a little more on our way there."

With all shyness long since vanished Fabre accompanied his distinguished visitor on the way to his train. He talked freely with him about his experiments and his study of insects. Then he went on to tell of his ambition to become a professor, and of his periods of high hope and of discouragement.

Duruy listened attentively. Then with deep sympathy he bade his companion keep up his faith in final success.

After the two had reached the station they walked back and forth on the platform outside, still busily talking. An old woman passed them. Her bent back showed a life of hard work in the outdoors.

Her clothing was ragged. She held out her hand furtively with the hope of receiving a coin.

Duruy pityingly placed in it a silver piece worth two francs. Fabre would have added a mite himself but his pockets, as was too often the case, were empty.

He stepped close to the woman, however, and whispered, "Do you know who gave you that money? It was the Emperor's Minister."

At that the beggar looked in astonishment at the great man who had given her alms, and from him to the silver piece in her hand, which was a wonder-sight to her.

She said to Duruy in a cracked but grateful voice, "May the good God give you health and long life."

He did not understand her country dialect, so Fabre had to translate her words to him. Then the two men entered the station to find themselves the center of interest to a gradually increasing number of people. The word had passed from one to another, it seemed, that here was the distinguished Minister of the Emperor, and every one wished to have a good look at him.

Among them was a general of division attended by officers; there also were a prefect, a mayor and a school inspector. Fabre, naturally shy, would gladly have run away, but it was too late. Standing beside his famous companion, he had to share the eager scrutiny of the crowd.

He afterwards compared himself that day to the

dog belonging to the noble monk St. Roch who had been sainted by the Catholic church after his death. He had tended the plague-afflicted people in an Italian city. Then he had gone off into the forest that he might not carry the terrible disease to others. And there he had lain ill and helpless, and would have died had not his devoted dog brought bread to him daily. Statues were afterwards set up in sacred buildings representing St. Roch with the faithful animal at his side. When people worshiped before them, the dog as well as his master received their homage.

Like a dog, then, felt the humble-natured teacher-chemist as he stood beside Duruy in the railroad station while the crowd saluted him with deep bows of respect and complimentary phrases.

Then came one of the surprises of Fabre's life, which he afterwards described vividly. The flow of compliments had begun to ebb when Duruy, with kindly touch, drew his companion's red-stained right hand from its hiding place in his coat.

"Show your hands to these gentlemen," he urged. "Most people would be proud of them."

In vain did Fabre strive to hold back. He was forced to obey, and with reluctance out came his "lobster claws."

"Those are a workman's hands," remarked the secretary of the prefect, not having anything else ready to say, "the hands of a true workman."

The general, who stood keenly observing what

was taking place, seemed scarcely able to understand the situation. There, before his eyes, beside the distinguished minister, stood the little, almost unknown, shabbily dressed experimenter, with his hands fresh from the dye pot.

"The hands of a dyer and a cleaner," he managed to say.

"Yes, the hands of a working man," Duruy declared earnestly. "And I wish you many more like them. They will, I am glad to say, do much to help the principal industry of your city. Not only in chemical work; they are no less skillful in handling the pen, the pencil, the magnifying glass, the scalpel. As no one here seems to know all this I am very glad to tell you."

At that instant, to Fabre's great relief, the bell rang for the departure of the train. Hurriedly bidding M. Duruy good-by, he left him laughing like a mischievous boy over his little joke.

But Fabre's embarrassment did not end there, because a chain of trying consequences was to follow the publicity he had suddenly gained.

"This teacher-chemist must have great influence since he is the close friend of Minister Duruy," decided the people who had been gathered about him at the railroad station, and their report of what had happened there spread far and wide.

The outcome was that Fabre was beset by benefit seekers. One man asked that he should use his influence to get him a license to sell tobacco. An-

other requested him to obtain a scholarship for his son. A third besought him to see that his pension should be increased.

"You have only to ask M. Duruy," they told him, "and he will grant what you desire."

Little did they understand Henri Fabre, in believing he would come to their aid in such matters. To take advantage of a man's friendship by asking favors of him for either himself or others? It was impossible. What would those office-seekers have thought, he wondered, had they known of his reply to the minister when he came to the laboratory and offered his assistance. If they had been aware that the only wish he expressed was for the skin of a crocodile they would have considered him an idiot.

CHAPTER XVI

The Coveted Badge

A quiet half year passed in which Fabre neither saw nor heard more of Minister Duruy. Then, one day, an astonishing letter arrived. It directed Fabre to betake himself to the Minister's office in Paris.

"Perhaps he wishes to give me a position in a larger institution than this," thought the zealous young worker.

Nevertheless, having no desire to leave his work in the laboratory, he answered the letter in this wise: he asked that he should be permitted to remain where he was.

Then a second letter came, this one signed by the distinguished Duruy himself. It was very brief. "Come immediately or I will have my gendarmes fetch you," it commanded.

That settled it. The next day found Fabre in the study of the great man who received him most cordially.

"Read that," he directed, handing a paper to his shy guest. "You refused to accept the chemical apparatus I offered you, but you won't refuse this."

Taking the paper in his hand, Fabre turned to the place to which Duruy had pointed. There, to

his amazement, he beheld his own name in the list of the chevaliers of the Legion of Honor! He was so overcome that he could scarcely speak his gratitude.

Duruy now directed him to come close to him that he might give him the salute accorded to a newly made member of the distinguished order.

"I will be your sponsor," he said. "If the ceremony takes place privately between us two you will be only the more pleased. I know you."

With that he pinned the red badge of the Legion of Honor upon Fabre's breast and kissed him on both cheeks, after which he despatched a telegram to Fabre's family, telling them of the coveted distinction that was now his.

Then followed one of the most delightful events of the memorable morning—a long and delightful conversation between the two men.

In writing, years afterwards, about the badge which had just been bestowed upon him, Fabre said: "It is a relic, a souvenir, and not a thing to be paraded in public. I keep it with religious care at the bottom of a bureau drawer." In his first months of pride, however, he must have worn it at times because it was the sight of that badge which saved him from being arrested on the day already described when the policeman who had been watching him suspected him of being a poacher.

During the happy hours spent with M. Duruy, the minister called his attention to a pile of books

on the table near him. They consisted of reports of recent achievements in science.

"Those books are for you," his companion told him. "Take them with you. You can look through them at your leisure; they may interest you. There is something about your insects there."

Fabre had not recovered from his astonishment at this splendid gift when the great man handed him a roll of money, twelve hundred francs in all. At the same time he explained that this money was to pay for the cost of the journey—that he was not willing it should be at his guest's expense. If there was then anything left over it could be spent on Fabre's laboratory.

Again and again his well-nigh stupefied companion refused to take the money. He said that his journey did not cost anywhere near as much as his kind friend proffered him. Moreover, his expenses were not to be compared in value with Duruy's embrace and his bestowal of the badge.

But his protests were of no avail.

"Take it," insisted the minister, "or I shall be very angry with you."

He went on to say that something else was still awaiting his visitor. He was to attend him on the morrow in a visit to the Emperor when he would be present at a reception to certain learned societies.

On hearing this, Fabre was absolutely dazed. Duruy must have seen in his face that he was bewildered at the very idea. "Don't dare to get away,

or look out for the gendarmes of my letter. You saw the fellows in the bearskin caps on your way up. Mind you don't fall into their hands. In any case, lest you should be tempted to run away, we will go together to the Tuileries in my carriage."

So it came about that Fabre in his shabby frock coat found himself next day at the Emperor's palace. Chamberlains in knee breeches and shoes adorned with silver buckles conducted him to a small drawing-room where at least twenty men who now had distinction in science were already gathered. Among them were botanists, geologists, explorers, and students of archæology.

The chamberlains were especially interesting to Fabre. To his thinking they were solemn, queer-looking objects as they stalked stiffly about in their showy livery. They reminded him, in fact, of beetles arrayed in gold-laced dress coats in place of their usual wing cases.

All else must have been forgotten when the Emperor appeared. He did not seem an especially majestic person to Fabre. He was dressed quietly, with no badge marking his lofty position except a wide red ribbon worn across his breast. His figure was plump; his eyes were half shut, as if sleep could claim him easily; his mouth was shaded by a long mustache. He went about the room, now chatting with this person, now that, and showing that he had some understanding of the subjects in which the different guests were most interested.

In due time he came to Fabre and began to converse with him about a valuable article he had written about insects. His companion, for his part, did his best to talk easily, but he became repeatedly confused when trying to address his Majesty with the proper term.

Altogether the conversation must have lasted five minutes—a long time for an emperor to spend with one person in a company, and consequently a great honor.

To the hitherto little-known teacher from Avignon, however, those five minutes were so distressing that he had no wish to repeat the interview, and when the reception ended he was only too glad to leave the palace.

But he was not free yet. He must now, perforce, go to Duruy's home where he was to sit at the minister's right hand at a luncheon given in his honor. A distinguished scientist sat at his left and he found hmself forced to share in the conversation.

Opposite him sat the minister's son who smiled in amusement when he discovered that the guest of honor, recently admitted to the renowned Legion of Honor, was eager to return to quiet Avignon, the home of his loved insects.

When Duruy himself found that he had no desire to remain in Paris he exclaimed, so Fabre has told us, "What! aren't you going to visit our museums, our collections? You would find some things well worth seeing."

How, think you, did his guest reply? "I know it, your Excellency," he said simply, "but I shall find still better things, and more to my liking, down there where I came from in the incomparable museum of the open fields."

So it came about that this man, whose keenest satisfaction was in the kingdom of Mother Nature, readily left the beautiful city with its treasures of art, behind him.

"I had had enough of Paris," he has told us, "never have I been so miserably lonesome as in that whirlpool of humanity. To get out of it and away —that was my one longing."

We can imagine the delight of Fabre's family when he returned to them after so many honors had been heaped upon him. We can picture his own delight as he entered the humble home where his wife and children were waiting to rejoice with him. And in fancy we can share his glorious dreams of a near future when his production of madder dye should be made practicable. Then, at last, the drudgery of years was to be over. In his mind's eyes he saw himself in a big university, teaching the subjects he loved best—zoölogy, the science of animal life, and botany, the science of plants. And there would be greater leisure than ever before for discoveries in the insect world! Bright indeed seemed the sky of the future.

CHAPTER XVII

The Dream Vanishes

"You shall remain a slave, dragging your chain behind you: your peal of bells rings false."

In this wise Fabre has written of the bitter disappointment that befell him not long after his return from Paris. When all seemed to be going well and he had begun to produce his madder dye in abundance, a rumor, faint at first, reached him that made his heart become leaden.

It was this: chemists had found out how to make alizarin without using madder. They could do it so cheaply from mineral substances that it was not possible to compete with them by using any other means. The spare hours Fabre had given for years to his work in the laboratory were seen on the instant to be of no avail. Gone were all hopes of advancement, and of a life of comfort for his family. He strove bravely to bear his ill fortune, though he could not quite keep a feeling of bitterness from his heart.

In his teaching other troubles had come to him. Some time before, he had arrived at the belief that girls should be free to have as good an education as boys, and for this reason he had given a course of lectures on natural history in the old abbey of Saint

Martial, that were open to all. They were so simple, so full of interest, so vivid in word pictures, that crowds gathered to hear him speak.

He made his lectures in botany particularly fascinating because he displayed marvelous flowers and plants and described their life and development in such a simple and interesting way that he held the attention of his listeners closely.

Unfortunately, there were people whose ideas were so old-fashioned that they were indignant that Fabre gave such teaching publicly, and especially to girls.

"He goes too far," they declared.

"In fact," so he has told us, "you can see how heinous my crime was; I was actually teaching those young women what air and water are; whence the lightning comes and the thunder; by what device our thoughts are sent across the seas and continents by means of a metal wire; how a seed puts forth shoots and how a flower blossoms; all eminently hateful things in the eyes of some people whose feeble eyes are dazzled by the light of day."

Not only did critics from the outside denounce Fabre for his fascinating free lectures. His brother professors who should have stood by him were jealous of the praises given him by admiring listeners at his lectures, and heaped ridicule on him. Jeeringly, they nicknamed him "The Fly."

Worse still was to happen. Before long he was driven from the home where he had lived for years.

The two elderly women who were his landladies had been asked by his enemies to aid them in removing him from the place. The women had little understanding of the value of his teachings. In their ignorance they thought: "Here is a man whose instruction is bad for young people. Like others with whom we have talked, we believe the place should be rid of him."

So it came about that the bailiff served a formal notice on the persecuted teacher, ordering him to move out of the house within four weeks, and stating that if he should fail to do so, his household goods would be put in the street.

The world had certainly become a dreary one for Henri Fabre, and he might well exclaim with justice, "It is all over; the downfall of my hopes is complete."

The old saying, "It is always darkest before dawn," proved true, however, in the case of the brave nature lover.

When he did not know how or where to turn, a famous man who had become his devoted friend came to his aid. This man was none other than the English scientist and philosopher, John Stuart Mill. Mill had visited Avignon years before and had discovered in Fabre a fellow lover of plants and flowers. The two men spent many happy hours together wandering about the country side and gathering specimens.

The friendship continued strong throughout the

years, and when Fabre was well-nigh crushed by misfortune, Mill helped him to make a new start in life by loaning him nearly three thousand francs.

There was no one else to whom he could have turned at that time. Minister Duruy would no doubt have gladly helped him if he could. Indeed, it was through following in Duruy's steps that troubles had befallen him, because that truly great man had done his best to help on the higher education of girls and it was his example that had set Fabre's mind on fire to do likewise. But, sad to say, Duruy lost his high position through a turn in politics and no longer had the power to help him.

Through John Stuart Mill, therefore, came the blessed opening. Crushed as Fabre had been, with the kindly help of his English friend he was soon busy "gathering up the fragments that remained."

"Let us try another lever," he exclaimed. "Let us seek to draw from the ink pot what the madder vat and the *alma mater* refuse us."

In other words, he decided to give up teaching and devote himself to studying nature and writing books about his discoveries.

With new hope for the future, therefore, he and his family left Avignon where he had spent seventeen busy years and moved to the town of Orange, twelve miles away.

There, with his wife and five children about him, he was to set out on his new venture.

CHAPTER XVIII

Danger

"Climb me and refresh your weary brain."

So Mount Ventoux had often seemed to call to Fabre during the years spent at Avignon. He loved the mountain dearly. After busy hours in the schoolroom he would turn his eyes longingly towards its rugged sides that stretched high above the Sunken Road so often visited by him in search of insect adventures.

"One might best compare Ventoux with a heap of stones broken up for road-mending purposes," he has written. "Raise this heap to the height of a mile and a quarter, increase its base in proportion, cover the white of the limestone with the black stain of the forests, and you have a clear idea of the general appearance of the mountain."

In some places the stones were small, like splinters. In others they were huge rocks piled on top of each other. At every step the climb became steeper and more difficult.

Moreover, there were no smooth slopes between those piles of rocks on which to stretch out comfortably and there were no brooks singing cheery songs; no cascades, except of stone. The only forests were near the base. The only sounds to be heard by the

traveler were those made by the pebbles dislodged by the climbers' feet, as they rattled down the slope.

An ugly mountain, so many of us might call Ventoux. Yet to Fabre it was full of charm. On its slopes he had a chance to study the blossoms of different climes, from the sweet smelling thyme and the scarlet blossoms of the pomegranate at the base to the poppies and other hardy blossoms of the frigid zone growing near the summit which was clad in a garment of snow half the year.

After making interesting discoveries all along the way, there was fresh delight for the climber when the top was reached at last. There, drawing in long breaths of the invigorating air, he could feast his eyes on the beautiful country spread far below for miles around.

Altogether, Fabre had heeded Ventoux's call more than twenty times, though a person could justly boast of reaching the summit only once because of the dangers surmounted and the difficulties overcome. Then a day came towards the end of the nature lover's life in Avignon when he formed a plan with two botanist friends in Paris to repeat the adventure. Why should they fear? He believed that only added knowledge, together with much jollity, was to be expected.

A party was speedily formed to make the ascent. Besides Fabre and his botanist friends there were four other men possessed of a love of sightseeing,

and the trusty guide, Triboulet, who was to keep all out of harm's way.

The night before the start was spent in an inn at the foot of the mountain, since the climb was to begin with daylight. After the adventurers had spent wakeful hours in which the noises of the inn gave them little chance for sleep, an ass began to bray in the barnyard. It was four o'clock of a dark, chill morning, and already time to set out.

The loud-braying ass and the mule provided for the expedition were quickly loaded with provisions and the bedding needed for the following night on the mountain. The signal was given for departure and the company set off with gay hearts.

Triboulet, as was fitting, headed the procession. Fabre, carrying a barometer, and also provided with a pencil and notebook, brought up the rear.

Higher and higher up the rough, rocky pathway mounted the adventurers. Oak and ilex trees were soon left behind, and almond trees began to appear. After them sturdy mulberry trees, walnuts and white oaks were encountered.

Above these lay a stretch of rocky soil where little of interest grew except mountain savory which was commonly called asses' pepper because of the sharp taste of its leaves.

The cutting morning air of the mountain and the difficulty of the climb made the stomachs of the travelers begin to cry lustily for food. Again and again they turned their eyes longingly to the bags of pro-

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visions carried by the ass and mule. But it was too early as yet to call a halt for breakfast.

"Try this," suggested Fabre. "It will stay your barking stomachs."

He pointed to a tiny sorrel plant with leaves pointed like arrows, which grew thickly about them.

Thereupon he plucked some of the sorrel and stuffed it into his mouth. The rest of the company laughed heartily at the example set them. Soon, however, all were busy "following the leader."

The *chewing* party, for such it had become, pushed bravely on past a wide stretch of beeches. Soon afterwards, to their joy, they arrived at the place where they had planned to rest and eat. It was beside the bubbling spring of La Grave where they found troughs dug out of beech trunks holding the clear sparkling water. Shepherds who tended their flocks on the mountain side had made these troughs and set them there for future use.

And now let Fabre, to whom feasting was delightful because rare, describe the happy scene that followed when no thought of danger lurked in any one's mind:

"The tablecloth is spread on a charming carpet of Alpine plants, the provisions are taken out of the saddlebags, and the bottles removed from their couch of hay. On one side is placed the chief course of the meal, the legs of mutton stuffed with garlic, and the piles of bread on the other, the chickens, less toothsome, but good for exercising the grinders after

the appetite's first sharp edge had been dulled; not far away are the little Ventoux cheeses flavored with mountain savory or asses' pepper; beside them we see sausages from Arles, their pink substance interspersed with little cubes of bacon and whole grains of pepper; yonder corner is occupied by green olives still dripping with brine, and black olives preserved in oil; in that other corner are melons from Cavillon, some with white flesh and others with orange, for all tastes are catered to; this corner here holds the pot of anchovies, a fine thirst provoker; and, finally, the bottles of wine stand cooling in the icy water of one of the troughs. Has anything been overlooked in this catalogue? Yes, the main feature of the dessert—onions to be eaten raw, with a sprinkling of salt. Our two Parisians—for there are two among us, my fellow botanists—are at first a little taken aback at beholding this superabundant spread; but they will soon be the first to voice their approval in eloquent eulogy. Everything is in readiness. Now take your places around the cloth."

Can we not seem to see our nature lover, with face beaming with happiness and eyes aglow, as he settled himself to enjoy with his companions that abundant feast of good things? No uncomfortable frock coat was he obliged to wear that day, now that dignity could be cast to the winds, but in its place a workman's heavy blouse was without doubt fastened closely about his small but sturdy frame.

No time was lost in attacking the abundant and delicious food. "Little short of frantic" were the movements of the feasters' jaws as bread and meat were rapidly devoured. They acted more like starving wolves than human beings.

At first they spoke scarcely a word. But when their hunger was nearly satisfied, they ate more slowly, stopping to praise the olives, the anchovies, the small, delicate cheeses.

At last all reached the point where they could eat no more. Packing up the remains of the feast for the night and following day, they stretched out on the ground to bask in the sunlight, and smoke as they rested.

An hour passed by. Then it was agreed that the climb must be continued.

"I will make my way towards the west," declared Triboulet. "Along the borders of the woods is a path which my beasts can follow. When I get to the cabin at the far end of the beeches I will wait there for you."

His companions knew that the stone hut he spoke of was large enough to furnish shelter during the night for the ass and mule as well as themselves. As for reaching it, that seemed an easy matter, because before Triboulet left them he gave careful directions as to their course. They were to keep on climbing till they reached the top of the ridge ahead of them. Following that, they could easily reach the summit of the mountain before sunset. Then they could

make their way without trouble to the cabin a little way below. How easy this seemed!

All went well till the ridge was reached. A wonderful view now met their eyes. South of them lay the gradual slope over which they had been traveling. To the north, however, the land dropped suddenly and they faced a fearful precipice. They had but to drop a stone over its edge to see it bounding from one jutting shelf to another till it reached a river valley far, far below.

For a time some of the party entertained themselves by pushing huge rocks over the edge of the precipice, and listening to the roar which filled the air as they fell crashing on one steep landing place after another.

Child's play this doubtless seemed to Fabre who had discovered a great company of wasps gathered under a big stone lying almost flat on the ground near by.

"Why are these insects high up near the mountain top," he wondered, "when their home is on the plains, and why are they huddled so closely together?"

He was roused from his questioning by a sudden downpour of rain. Worse still, the air had become so filled with thick mist that he and his companions could scarcely see two feet beyond them. The south wind, bringer of the clouds that Fabre had noted earlier in the day, had caused this unpleasant change.

And now came fresh cause for anxiety: one of the

botanists was missing. He had left the others to search for a certain plant found only in high places. No one knew in what direction he had gone.

It was an anxious moment. It was felt that there must be no delay in locating him. Together, the little company shouted with all their might through trumpets made with their hands.

They received no answer.

"We shall have to search for him," they agreed.

Joining hands, to keep in touch with each other in the thick mist, and with Fabre for leader, because he was the only one among them acquainted with that part of the mountain, they began the search.

Now in this direction, now in that, they made their way till they had lost their bearings. Then fear seized them. They realized that they were lost and had no compass to guide them. No trace of their friend had been discovered, while both to the left and right the ground seemed to slope away.

"Our missing companion knows the mountain," they now considered. "He probably was warned in time by the gathering clouds and hurried to the cabin before dark overtook him."

As for themselves, they realized they must decide without delay upon the course they should take. They were already drenched to the skin and could feel the icy water trickle down under their clothing.

But how were they to reach a decision that would mean safety?

North of them, as they knew, lay one of the preci-

pices which had filled them with awe. One false step, and they would fall over it to certain death. But they did not know which was the north.

"Let us stay where we are," said most of the party.

The others, however, said "No." They would only freeze to death there in that cold, drenching rain before morning should come. It was a moment of horrible anxiety.

Then Fabre, drawing aside with the botanist who was still in the company, held a council with him which later on he wrote out at length.

"When the clouds first gathered," he asked, "did they not come from the south?"

"Yes, unquestionably, from the south," was the answer.

"And although there was hardly any wind perceptible, the rain came slightly slanting toward the north?"

"Certainly, I took note of that direction, so far as it was possible to do so. Haven't we there something to serve us as guide? Let us go in the direction the rain comes."

"I had thought of that," replied Fabre. "But I have some doubts. The wind is too slight to have any well-defined direction. It may be a shifting wind such as often prevails at the summit when clouds gather there. We have no assurance that the original direction of the wind has continued and that

whatever breeze there is may not come from the north."

"Yes, I quite agree with you. What, then, is to be done?"

"There's the difficulty. But I have an idea; if the wind has not shifted we ought all of us to be wetter on the left side than on the right, the rain having come from that direction as long as we could make out our bearings. If it has shifted we ought to be about as wet on one side as on the other. Let us all feel of ourselves and decide the question. Isn't that the best plan?"

"Assuredly."

"But what if I am mistaken?"

"You are not mistaken."

After thus reasoning out some clew as to direction, the two men turned to their companions and told them of the conclusion they had reached.

All proceeded at once to examine their bodies as well as their clothing. To Fabre's relief, each one had the same answer: his left side was wetter than his right.

So the wind had not changed! It still blew from the south, and towards the south, as all had known, they should make their way to reach safety.

In the heavy rain and dense mist they plunged hopefully, but still with some fear, up the steep and narrow slope ahead. They had advanced only a short distance when every possible doubt vanished—they found themselves dislodging small stones that

made a rattling noise delightful to the travelers' ears as they rolled down the slope. The ground was firm and the way safe. Great was the relief!

In a short time they had reached the upper edge of the beech woods within which was the stone hut where rest and warmth would come to their chilled bodies. But now the darkness was even greater than on the height above, whence they had come. The question arose as to how they could find the cabin.

Fabre, who had saved the lives of the party by his quick wit and careful reasoning, speedily thought of the way to reach the hut: two plants that grew thereabouts, the stinging nettle and pigweed, must be their guides.

Some of the party did not believe that sufficient help could be furnished in this way.

"Let us keep straight on down the mountain with all speed possible," they proposed.

But Fabre and his botanist friend would not agree to this. They felt sure that nettles would guide them to safety in short order.

They were not disappointed. By careful groping, and after receiving many pricks from the sharp leaves, the party safely reached the hut where they found the missing botanist, as well as their guide who had a glowing fire with which to welcome them. Dry clothing was also at hand, and with utmost comfort the company, once more united, gathered

about the blazing fire to satisfy their hunger with abundant food.

Then they stretched themselves out for a night's rest on piles of beech leaves that had doubtless furnished many other mountain climbers with bedding. Weary as they were, there was unfortunately little sleep for them, as the hut had no chimney, and though some of the smoke from the fire made its way outdoors through a hole in the roof, most of it remained inside. Coughing and choking, the men had little comfort through the night hours, and by two o'clock next morning were glad to start out on the final climb to the summit of Ventoux to view the sunrise.

How different the world seemed to them now! The rain had ceased falling and the mist had vanished. The ascent might have seemed a frolic if every one had not been weary from the climb of the day before and the lack of sleep.

As it was, the little company made their way with difficulty, panting for breath because of weariness and the thinness of the air in that high altitude.

At last they reached the goal. Great was their reward as they watched the sun mount in the heavens in all his majesty. Far, far below them was the plain which they had left behind them the morning before. They could not see it at first, however, because almost at their feet stretched great banks of clouds. In Fabre's words they formed "a sort of ocean of white cotton wool."

Among these cloud banks the peaks of mountains, less lofty than the one on which the men were standing, gradually came into view, while away in the distance, as far as the eye could reach, they beheld still mightier peaks of the Alps, with glaciers, sparkling in the early sunlight, embedded between their slopes.

Thrilled as Fabre was by the scene before him, his love of flowers soon made him turn his attention to what was growing about him. Accordingly, he and his botanist friends began to gather rare specimens not to be found in the country below.

While thus busy, the insect lover's thoughts turned again to the wasps he had discovered under the flat stone the day before.

"Why," he wondered, "had that swarm of wasps flown to such a height when their home was in the lowlands?"

"It must be," he pondered, "that they were on their way to winter quarters in warmer lands and Ventoux was in their line of march."

This seemed a reasonable explanation to him when he recalled the queer sight he had beheld on the summit of the mountain during a previous visit. A little chapel standing there had been fairly *covered* with ladybugs! It was August, the time when birds are wont to fly southward. Unquestionably those ladybugs and also the wasps had been impelled by the same instinct as the birds.

The time soon came for the party to begin the descent of Ventoux. No dangerous experiences be-

fell them as on the previous day, and all reached home safely. Fabre, fearless man that he was, climbed to the summit several times afterwards; but the four companions who had gone purely for the fun to be had, never ventured there again. They realized that their lives had been saved almost by a miracle through the keen reasoning of their naturalist friend and they had no desire to risk them a second time.

CHAPTER XIX

The Great Venture

When Fabre bade good-by to Avignon, happiness was ahead of him such as he had never known before. Henceforth he would be able to spend his time as he wished. No longer would there be drudgery. No longer would he be the slave of the clock. He could plan his hours as he wished with no thought of classrooms and set lessons. He was comparatively free.

Nevertheless, he realized fully that he had a wife and five children to support as well as himself. Money was still needed for food, simple though it might be; for clothing; for shoes for seven pairs of feet; for shelter, however humble.

"I will write textbooks for boys and girls. These will provide the means," Fabre decided hopefully. "And they shall be books filled with such interest that the young students shall enjoy their study. There is not the slightest need of their being dull."

The kind man's eyes must have sparkled with delight at thought of his new venture, and he could scarcely wait to begin carrying out his plan.

After getting settled at Orange, therefore, he set to work writing books that were to make alive for boys and girls the universe around them.

With the help of "Uncle Paul," as the writer called himself, his young readers learned wonderful things about plants and animals; they visited the sun and his family of planets; they became acquainted with the earth itself, the air, the waters teeming with life; they became interested in the clothes they wore and the sources from whence these came.

In every book that Uncle Paul wrote he seemed to talk to his unknown young friends as though he were in their company. So bright and clear and simple, and with such touches of fun, were his writings that they never failed in charm. And yet, if there was need of an unusual word to give the meaning fully, there it was. Nevertheless, in Fabre's hands it did not seem difficult in the least.

In his home he had the best possible help because his family shared his interest. If he needed quiet, all were glad to be as still as so many mice.

His children loved him as deeply as he loved them. They were as happy in sharing his work as in having his company in times of play. Joyfully they wandered about the countryside with him in heat and cold, sunshine and rain, their bright eyes as eager for discoveries as his. They watched his experiments with keen interest.

One of these experiments filled their hearts with pity. Their father wished to find out if the bite of the tarantula, which was a deadly enemy to many

insects, was equally dangerous to other animals and human beings.

Accordingly, he captured a young sparrow and let a tarantula bite its leg. Thereupon the poor little victim's toes lost their grip and the leg became helpless. Otherwise he seemed well enough, and he contentedly ate the feast which Fabre's daughters set before him—flies, a crumb of bread, the pulp of an apricot.

"He will recover from his wound," thought Fabre hopefully. "Then he shall again have his freedom."

Hours passed by, and the sparrow grew ever more lively, though he was still obliged to hop about on one foot.

After two days, however, there was a change for the worse. The bird refused food. With feathers rumpled, he remained motionless except for occasional convulsive twitches.

The tender-hearted girls who were watching him tried to warm him in their loving hands. In vain! After more and more frequent twitching, the bird drew a last choking breath and life went out of him.

The whole family grieved over the death of that sparrow. Perhaps Fabre himself felt saddest of all. He realized that he had caused the bird's death, and it was hard for the tender-hearted man to bear the rebuking glances his children cast at him when they gathered with him about the usually merry supper table.

Of his five children none was dearer to him than

his son Jules, who was a lad of great promise, and much like him. "All fire, all flame," his father said of him. The lad loved flowers passionately. He had such a fine sense of touch that by merely moving his fingers over the leaves of a plant he could tell its name.

Never were two people more devoted than Fabre and this son. Sad to say, their happy companionship came to an end there in Orange when Jules was taken from his father's sight soon after his fifteenth birthday.

But Fabre believed firmly that he would meet his son again when he reached the beautiful heaven world; and though he grieved for Jules to the end of his days, this faith remained strong.

So closely did the nature student live with his children that thoughts of them were intertwined with the books he wrote and the discoveries he made. He even gave the name of one or another to rare insects he found, while to the gifted Jules he dedicated the first and second of the series of ten large volumes which he began to write during the nine years he lived in Orange. This series he called "Entomological Souvenirs."

This is a long name and rather hard to pronounce. But when we think of its meaning—that *souvenirs* are mementos or reminders, and that *entomological* is a short way of saying, concerned with what takes place in the insect world, it seems quite simple.

However, people generally refer to these valuable

books as Fabre's *Souvenirs,* and with good reason. In fact our nature lover tells in them many things about himself and his happy life with his wife and children, as well as of his adventures among insects.

This is how the idea of writing such a series arose in his mind: He was out tramping one day with five or six young friends. With him as teacher and guide, they were on the lookout for discoveries. Among other things they wished to learn if the dung beetle, the scarab sacred to the Egyptians, had arrived for the season on a certain sandy plateau.

"We were going to see also," Fabre has told us, "whether the little brook at the foot of the hill would not have, under its carpet of water lentils, a few young tritons with coral-like gills; and to see whether the stickle-back, that graceful little fish of our small streams, had donned its wedding cravat of azure and purple. We wished, further, to find out whether the swallows had arrived and were skimming the meadows, hunting the crane fly, which dances about as it lays its eggs; and whether the spotted lizard was sunning its blue-speckled body at the mouth of a burrow hollowed out in the sand; and also whether the laughing sea gull had come up from the sea in the wake of the legions of fish that ascend the Rhone to spawn in its waters—whether, I say, the sea gull had also arrived and was soaring in flocks over the river, uttering its peculiar cry which is so like a maniac's burst of laughter; and whether—but let that suffice. It is enough to say

that we, simple and unpretentious folk, taking a lively pleasure in spending our days among the birds and the animals, were going forth to enjoy a morning in the unspeakably delightful festival that recurs every year with the springtime awakening of life."

That must have been a care-free, joyous day for the young folks in Fabre's company as well as for himself. And while they frolicked on their way, with eyes turned now here, now there, in search of some fresh surprise, a plan was forming in the mind of their guide.

"I will collect for older folks," he decided, "the articles I have already written, and these shall be bound together in book form."

So it was that the *Souvenirs* which have since helped tens of thousands of people to learn about the wonders taking place every day about them, began to take shape.

During the nine years Fabre spent in Orange he lost, not only his son Jules, but the dear friend, John Stuart Mill, who had made it possible for him to go there by lending him a large sum of money. It should be said that Fabre was so honest and industrious that he succeeded in paying back that loan before Mill's death, though it meant continual sacrifice to do so.

While in Orange he had many trials in regard to his books. His loved country was at war with Germany for a long time, and during the siege of Paris

especially, there was a long delay in his receiving royalties from the publishers.

During that period our nature lover became very ill with pneumonia, and for days he lay so close to death it seemed as if he could not recover.

But even when he felt he was about to take leave of his earthly home he thought of the insects which he loved most.

It had been a winter of bitter cold. Snow covered the ground which was frozen hard. Yet Fabre's son Emil, hoping to gratify his father's wish, went outdoors with his spade and dug up the earth in a place where bees were often busy in summer. He succeeded in obtaining a few stupefied insects and brought them to his father. In the warm air of the room they gradually came to life and began to fly about the bed. The sick man's wish had been gratified. Weak and almost unconscious as he was, he followed the bees with his eyes. Though he was ill for a long time he gradually recovered and was once more able to go on with his work. Though he had not feared death, he was glad to live for the sake of his family who needed his loving care.

CHAPTER XX

The Last Move

"I will not stay here any longer," Fabre decided indignantly.

Well might he say this—the man who so loved birds and trees and delighted in having them about him. It seems that the owner of the house where he had lived since coming to Orange had cut down two rows of noble plane trees that bordered the road in front of Fabre's home. It was too much for him to bear. No longer could he watch the nesting of sweet-singing birds in the springtime. No more could he listen to the shrill notes of the locusts which had been wont to gather on the branches of the trees on hot summer days. Never again could he and his household enjoy the delightful shade they had loved so well.

After declaring that he would move from the spot which had grown dear to him, but was now changed, the question before him was where he should seek a new home. Of one thing he was sure: it must be in a quiet place, where he would not be disturbed in his work by the sight of many people, and where insects would be found in plenty.

To his great joy he soon found the locality he desired. Not many miles from Orange lay the tiny

market town of Serignan with its pretty fountains and trees and old tower; its little church; its lime-washed houses with flat roofs.

Moreover, on the border of the town and apart from other buildings was a house of two stories, painted pink, with heavy wooden shutters. It stood at the end of a lane of lilacs, and in front of it were plane trees among whose branches birds and locusts flitted freely. Furthermore, high walls shut in this home so that passers-by on the road outside could not get even a glimpse of what lay within.

Altogether, it was Fabre's dream home made real for him. He promptly bought it with money he had managed to save while in Orange.

The best thing about it to the nature lover has not been mentioned yet. Besides the garden where flowers and vegetables could be raised there was a plot of ground which the peasants in the country about called a harmas. In other words, it was an untilled, stony tract of land where little else grew except wild thyme and thistles.

"An 'Eden of bliss'" Fabre called this harmas because of its being the favorite haunt of myriads of insects.

"This rejected plot of ground," he wrote, "that no one would have had as a gift to sow with a pinch of seed turnips happens to be an earthly paradise for the bees and wasps. The abundant growth of thistles and centaury that is found here draws these

tiny creatures from all directions. Never, in my insect-hunting memories, have I seen so large a population in a single spot; all the trades have made it their rallying spot. Here come hunters of every kind of game, builders in clay, cotton weavers, leaf cutters, cardboard workers, plasterers mixing mortar, carpenters boring wood, underground tunnel makers, workers in gold beater's skin, and countless builders of other kinds."

So much had Fabre to discover in that Eden for insects that he no longer needed to take long tramps out into the country as he had done before. Indeed, he had little desire for such tramps—there was too much of interest close at hand in the harmas.

He could spend only a part of each day there, however. At six o'clock each morning he left his bed, ready for a busy day's work. In fancy let us watch him, as donning a peasant's blouse (no longer had he need to wear the frock coat of a professor, which he had always loathed) and setting an old broad-brimmed felt hat down over his hair, he began to pace the tiles of the kitchen floor. As he moved back and forth he ate his simple breakfast, which consisted mostly of fruit, at the same time thinking over the subject that most interested him at the time. Such a thin, furrowed face was his! Such keen, bright eyes! Such a lithe body to which quick motion seemed most natural!

Having eaten his breakfast in silence, he next

sought the garden where, with pipe in mouth, he took a few rapid turns. Then he sought the big sunny room of the house which was at once his study and his laboratory.

It was a most interesting room. In the center was a large table on which old bottles, sardine boxes and flowerpots were always to be found, together with a number of covers of metal gauze covering earthen saucers. Under these, and in the glass-topped boxes and flowerpots were insects and their eggs and cocoons which Fabre watched from hour to hour and from day to day, as they developed. The changes of the insects from one form to another were to the absorbed student "more wonderful than that of the acorn which makes the oak."

Against the walls of the room were boxes filled with specimens of insects which Fabre had collected during many years, of seashells gathered when at Corsica, and coins and bits of pottery found in different wanderings.

Above these boxes stood an object of pride and joy to the owner. It was an herbarium containing hundreds of specimens of plant life, both of sea and land, which he had collected during his life.

When getting ready to write he would walk, with pipe in his mouth, around and around the big table, and as his feet pressed upon the tiles beneath him, he would think carefully about what he had seen in the harmas and the experiments he had been making. Even the right words to use in his writing were care-

fully considered, since he felt that whatever he was to give the world must be perfect in its dress.

At last the long tramping came to an end and he sat down at the tiny walnut table in the corner of the room, which he had used for nearly fifty years. He has described it as "about the size of a pocket handkerchief, spotted with ink and scarred with knife cuts, just big enough to hold the halfpenny inkstand and his open notebook."

And now he began to write, "his pen dipped not in ink, but in his heart's blood."

Yes, it is certainly true, it was with his heart's blood that the pages were written, because into them he put himself, his life, his love.

At the end of the busy morning he was pale and weary. But he had no thought of rest. The time had come when he was free to wander at will about his garden and the harmas. And so, armed with a microscope, stubs of pencils, and scraps of paper, he would seek the outdoors, ready for fresh discoveries. A few steps might bring him to a plant on which an interesting insect was perched. Here, perhaps, was a chance to learn something new and he would bend down, microscope in hand, to examine it. Over there, it may be, was a curious looking little mound of earth. He must investigate it without delay, and make notes about the tiny inhabitants within, if such there were.

The long afternoons of summer passed quickly

in his varied work, and darkness fell all too soon. But somehow, during the busiest day, Fabre found the time needed to teach his children who were not allowed to be backward in their studies.

Even when the hours for sleep had arrived, and the rest of the family were peacefully resting in the Land of Nod, the master of the household often spent hours in his laboratory watching cocoons about to burst, or busy with some interesting problem he wished to solve.

The household of the Harmas, as he called this new home, was a large one, as usual. Besides his wife and children, there was his old father who had never succeeded in business and had come to his son Henri's to end his days with him. And of course there were household pets, a big family of cats, and the faithful dog, Bose, among them.

The mother cats and kittens behaved exceedingly well when the family moved from Orange; they quickly adjusted themselves to their new home. But there was one old tomcat, Tawny, that made a good deal of trouble.

"We will keep him shut up in the attic for a while," the family decided, "and he shall have an extra number of plates to lick."

He was not allowed to feel lonely in his prison. The other cats and kittens were taken to visit him and he received an unusual amount of petting.

At the end of a week every one decided that it

was safe to give Tawny his freedom. He was allowed to go down into the kitchen, and under Aglâe's watchful eyes, out into the garden, after which he returned to the house of his own will.

"He will be all right now," decided his master. "He will not run away." The rest of the family agreed with him.

Greatly were they mistaken. The next day there was no Tawny anywhere to be seen.

"He has returned to Orange," declared Fabre. But his family could not believe it. Why, he had been brought in a closed basket! It seemed impossible that he could have found his way back over four and a half miles.

Yet the master of the house insisted that such must be the case, and that Tawny was probably mewing at the door of the old home even as he spoke.

Aglâe and Claire forthwith went to Orange in search of the runaway and found him there. But such a forlorn looking cat as he was! The fur on his belly and paws was covered with red clay, though no rain had fallen and no mud was anywhere about. How had this happened? Much as he hated water, he must have swum across the river that lay across his direct path and then crossed a field of red clay. To be sure, there were bridges farther up and down the stream; but he was bent on making his journey in the shortest way.

When the girls brought him back he was again

shut up, this time for two weeks. But in vain! As soon as he was once more free, he fled to his old home.

"It is of no use to try to make him contented here," considered his master. "We will have to let him end his days as he will."

Fabre continued, "What guided him in his journey? He had not seen the road on his way to Serignan, because he was shut up. Hence his memory did not help him. What is the nature of the curious faculty which guided him and which we call instinct?"

Before this experience with Tawny, his master had found the same thing happen with another pet cat. Mason bees also, he had discovered, had the ability to find their way home again to a remarkable degree. They might be shut up in sacks and be tossed about till they lost all sense of direction. And yet they would return to the place where they had been captured. It was very curious.

The first time Fabre experimented with the bees he carried about forty of them shut up in paper prisons to a place about two and one half miles away. Then, before freeing them, he marked their wings with white chalk and gum arabic. Not an easy matter, that last! He was stung repeatedly; besides, careful as he tried to be, he injured about half of his prisoners. The rest flew off as soon as they were set free. In the meantime Algáe, the

faithful helper, remained near the bees' nest to watch for their possible home-coming.

"I doubt if they return," thought Fabre as he started on his way back. "The breeze that has just begun to blow will cause them to keep near the ground, so they can't tell as well where they are going."

To his joy, however, Aglâe, in great excitement, met him with good news. Two bees had already arrived, forty minutes after they had been freed. By the next day fifteen out of the twenty had reached the home nest. It seemed wonderful indeed.

Not long after the family were settled at Serignan, Fabre's faithful wife died. By this time his children were grown up. Some had already left the family nest, while others were soon to do so. The household did not run as smoothly as under the wife's thoughtful care. Besides, Fabre was lonely.

Two years passed in this way. Then, to the astonishment of his neighbors, who looked upon him as an old man (he was over sixty at the time) he married a young woman.

"No good will come of such a match," declared the gossips, shaking their heads wisely.

But they were mistaken. Though Fabre was old in years, he was young in mind and body, and much happiness was in store for him. The young wife proved a true helpmate, and the three children that were born in course of time were a great help to their

father. Like his other children, they loved nothing so well as to aid the nature lover in his work. Helped by their bright eyes, he made many an interesting discovery. Through their keen hearing he became acquainted with the music of insects that was now too delicate for his ears to sense.

CHAPTER XXI

The Night of the Great Peacock

Paul, Marie Pauline, and Anna—these were the names of the little children who were born to Fabre and his young wife at the Harmas, or Hermitage as its owner's friends sometimes referred to it because the nature lover's life was so much like that of a hermit.

All three of his young children became his devoted companions as soon as they were old enough to share in his happy work. Little Paul, the oldest, was a remarkable child. With his wonderfully keen ears he could hear the faint music made by a grasshopper as it beat its wings against its sides. While still far away he could tell the burrow of some insect from an ordinary heap of earth.

"He lends me his eyes and ears," his father said of him. And in return this father told him many things to which the child listened with eager attention.

Nothing in nature seemed disagreeable to the little boy. "He will gather handfuls of the most repulsive caterpillars," declared Fabre, "with no more apprehension than if he were picking a bunch of violets."

When Paul was seven years old a night of great

excitement came for him and his father. That morning, it so happened, a beautiful moth of the largest kind found in all Europe had come forth from her cocoon on the workroom table in the laboratory. The insect lover watched her as she gradually came into view, clad in her wondrous gown of maroon velvet, with soft furry white about her throat.

Fabre promptly placed this treasure under a cover of wire gauze to watch her at his leisure.

And now let us listen to his account of what happened as he gave it in his delightful book, *The Life of the Caterpillar.*

"At about nine o'clock in the evening, just as the household is going to bed, there is a great stir in the room next to mine. Little Paul, half undressed, is rushing about—jumping and stamping, knocking the chairs over, like a mad thing. I hear him call me: 'Come quick!' he screams, 'come and see these moths, big as birds! The room is full of them.'

"I hurry in. There is enough to justify the child's enthusiastic and hyperbolical exclamations, an invasion as yet unprecedented in our house, a raid of giant moths. Four are already caught and lodged in a bird-cage. Others, more numerous, are fluttering on the ceiling.

"At this sight, the prisoner of the morning is recalled to my mind.

" 'Put on your things, laddie,' I say to my son.

'Leave your cage and come with me. We shall see something interesting.'

"We run downstairs to go to my study, which occupies the right wing of the house. In the kitchen I find the servant, who is also bewildered by what is happening and stands flicking her apron at great moths whom she took at first for bats.

"The Great Peacock, it would seem, has taken possession of pretty well every part of the house. What will it be around my prisoner, the cause of this incursion? Luckily, one of the two windows of the study has been left open. The approach is not blocked.

"We enter the room, candle in hand. What we see is unforgettable. With a soft flick-flock the great moths fly around the bell jar, alight, set off again, come back, fly up to the ceiling and down. They rush at the candle, putting it out with a stroke of their wings; they descend on our shoulders, clinging to our clothes, grazing our faces. The scene suggests a wizard's cave, with its whirl of bats. Little Paul holds my hand tighter than usual, to keep up his courage.

"How many of them are there? About a score. Add to these the number that have strayed into the kitchen, the nursery, and the other rooms of the house and the total of those who have arrived from the outside cannot fall far short of forty. As I said, it was a memorable evening, this Great Peacock evening. Coming from every direction, and informed

I know not how, here are forty lovers eager to pay their respects to the marriageable bride born that morning amid the mysteries of my study."

Little Paul's interest in his father's discoveries did not weaken as he grew older. He continued to be an earnest helper as years passed by, and was never too tired or too busy along other lines to go out on long tramps in search of insect adventures. Indeed, when his father became too old for the hard work he loved, Paul was his "right-hand man" in digging into the long underground tunnels where certain kinds of insects were in the habit of burrowing and when Fabre wished to study them in their favorite haunts.

The other children and their mother, as well as Paul, were ever ready to give their aid.

Let us imagine the happy family party busily searching in the harmas or out in the country beyond for fresh discoveries. They turn their eyes now this way, now that. One hurries off in one direction, one in another, each eager to see first what all are seeking.

Grateful indeed was Fabre that he could have such keen-sighted helpers. Of them he wrote, "If I am still able to pursue my investigations I owe it to them; let me thank them duly."

CHAPTER XXII

What Guides the Insects

"Come hither, all you little creatures that have stings or wing sheaths, hear my defense and testify in my behalf."

So wrote Fabre when he heard of the unjust attacks some men of science had made upon him. They declared that the delightful books he had written about insects and animals for boys and girls could not be true, because the stories were so simply told and with such charm on every page.

They declared scornfully: "Fabre's stories do not weary the reader as do the usual carefully prepared books of science."

Such a criticism showed the smallness of their minds. They must have been envious of the man who could interest young people in nature as they could not. Little did they understand how faithful he was in his search for truth.

Such criticisms naturally grieved him, so he continued his defense by saying to the insects: "Tell these doubters in what intimacy I live with you, how patiently I observe you, how scrupulously I observe all your actions—whoever cares to question you as I have questioned you will get the same answers as I have got."

He went on to say that if his loved insects could not convince the critics, he would criticize them. He would say to them: "You rip open the little creatures, but I study them as they live; you make them an object of repulsion and of pity, but I cause them to be loved; you work in a chamber of torture, of dismemberment, but I observe under the blue sky and amid the shrilling of the cicadas; you apply chemical reagents to the tiny cell and bit of protoplasm, but I watch the promptings of instinct in its highest manifestations; you scrutinize dead matter, but I examine what is alive."

He said, further, to his critics: "I will have none of your scientific lingo which, too often, alas, sounds as if it had been taken from some North American Indian language."

Thus we can see that Fabre not only believed in expressing simply what he had to say, but also had intense hatred of vivisection. He called a dissecting room "a torture chamber," and bitterly blamed men of science who "rip up animals to pry into death."

He was, in fact, like St. Francis of Assisi in his love for all living creatures. As St. Francis felt that birds, sheep, and even fierce wolves were his brothers, so Henri Fabre felt not only towards the beautiful butterflies but to the wasps and tarantulas that were allowed to dwell in safety in his garden.

Among the household pets at the Hermitage was a faithful dog. Now, this dog delighted in nothing so much as to attend his master in his outdoor ex-

cursions. But, one day, when Fabre had lain for hours in the burning heat of the sun, trying to discover the habits of some tiny insect, the panting creature stretched at his side lost patience and slunk homewards where he might be cool and comfortable.

At another time, when the heat was simply terrific, and Fabre was lying motionless in an open field bent on some insect discovery, the dog left him after a while to seek the shade of a clump of oak trees. There he dug himself a hole in a sandy bed, where he might get a little relief from the heat. Still panting, he looked over towards his master with questioning eyes. Fabre tells us that those eyes seemed to say: "What are you doing over there, you simpleton? Come over here into the shade. See how comfortable I am."

This set our nature lover to thinking. "Why is it," he asked himself, "that man has a never satisfied longing for knowledge, while a dog is content with little more than a few bones?"

In fact, Fabre was striving all his life to understand the difference between the instinct of animals and the intelligence of human beings.

"Can insects reason?" he asked himself.

The great Englishman, Charles Darwin, was at that time asking himself the same question, and after a while made up his mind to this: the instinct of animals develops in course of time into the reasoning faculty of human beings.

THE DOG ATTENDS FABRE ON HIS EXCURSIONS ABOUT THE HERMITAGE

Not so, believed Fabre. He admired Mr. Darwin greatly and the two men became great friends. But Fabre, after many careful experiments, decided that there was a bridge between instinct and reason that could never be crossed by means of evolution.

The more he studied the life of plants and animals about him the more sure he felt that this was so. The will of the Heavenly Father, he felt, was guiding, directing their activity at every step.

It was the instinct shown by insects which most filled him with wonder.

As he watched them in the harmas and elsewhere he was possessed by a spirit of reverence for the Power that directed their lives.

Did you ever read the story of the poet William Blake and his little son—how he took the child to the window and bade him look out and see God? In Blake's way Henri Fabre viewed the realm of nature around him. It was to him more and more a wonder world—the dwelling place of the Most High.

It therefore seemed to him impossible that the instinct of the animal world developed in course of time into the reason of man.

"I believe that reason is the distinct gift of God to man," he would have told you, "and is not a development from the instinct of animals."

With careful, open eyes, therefore, he went to the wasp, the beetle, the spider, and other tiny creatures about which men of science had learned little.

Surely they had something to tell him on such an important subject.

The pine-tree caterpillar rewarded him richly for his patient questioning. He found it a most curious little creature. On its head were five points that could be seen clearly only with the aid of a magnifying glass.

"These *may* serve for eyes," thought Fabre, "but if so, what is seen with them must be very slight. Besides, since they are active mainly at night, the ability to see would be of little use." He also became sure that the caterpillars had little, if any, sense of smell. They depended upon the sense of touch when moving from one place to another in search of the pine needles which supplied them with nourishment.

This was the way in which the caterpillars procured their food: they traveled in single file, closely following the one that chanced to be leader, the head of each of these always touching the back of the one in front of him. They were well named, *processionary caterpillars,* because they traveled always in this manner. Furthermore, as the leader moved forward he discharged a fine silken thread from his mouth, fastening it to the twig or branch under him. The caterpillar behind him did exactly the same thing, strengthening the first silken thread by his own. The third followed the example of the second and so on and on till behind the caterpillars stretched a broad, smooth, shining road.

Then what? After reaching a branch where the pine needles were plentiful, the caterpillars, still spinning thin silken threads, separated to feast on the meal provided for them, in what might have seemed to them a dense jungle of needles. As they scattered to enjoy their feast, the various threads branched out in the shape of a fan.

When each feeder became satisfied he did not turn directly around to return home. Instead of this he groped his way, in a sort of loop, till he reached the road which he had made on his way to the feeding ground. When at last the whole company had done this, they returned, single file, over the silvery road to the nest from which they had started out. Though there was no further need of doing so, they still spun silken threads and attached these as before to the road which they had already made so strong.

Fabre discovered that these pine-tree caterpillars always acted in exactly the same way. There was never the slightest change in the method. To do anything new or different was impossible for them. The same instinct, it appeared, guided them to obtain their food and return home as it had guided generations of caterpillars from the beginning.

"But I will make myself sure on this point," Fabre promised himself, "by making an experiment."

The opportunity he longed for came at last. On a bench in his garden stood several large pots used

for holding palm trees, while on its surface there were also many caterpillars that seemed to enjoy climbing up the sides of one of the pots and then resting on the broad rim for a while. Having spun a silvery road, as usual, they were able to make their way back without trouble.

"Suppose," thought the watcher, "as the procession wound its way around the rim, the line should become closed. Furthermore, suppose I remove the threads they have attached to the sides of the pot, along which they would be able to retrace their march. Then what?"

First of all, he brushed away any caterpillars that were still mounting the pot to join the rest of the company.

In the next place, he carefully brushed away all the threads clinging to the sides, along which the caterpillars on the rim might find their way down to the bench. Then he stood by to watch what would happen. Slowly but constantly the procession in which there was no longer any opening, any leader, crawled round and round the rim of the flower pot. Each caterpillar's head, as usual, was closely touching the rear of the next one's body. Each one, as before, followed the silken thread already laid down by the others, and strengthened it by a thread of its own spinning. The silvery road constantly became thicker, broader. But there were no branch roads because Fabre had been careful to brush all such away. Round and round, therefore, marched the

procession, hour after hour, and day after day. There was no leader, you remember, to reach out his head, now on this side, now that, scouting for his followers.

Gradually those processionaries became exhausted in that endless march during which no food was at hand and the weather was bitterly cold. Here and there one of the chilled, starving creatures stopped in its course, unable to go on with the march. The others, however, soon closed up the ranks and went on as before.

Then came a warm day, the sixth after Fabre had begun his experiment. The caterpillars, thoroughly chilled by this time, moved no longer in close file. There were now several processions and as many leaders. And these leaders with twisting bodies began to reach their heads out inquiringly. Finally, one of them ventured to travel part way down the side of the flowerpot, with a few followers after him. But the adventurers soon returned to the rim, still starving, though Fabre had placed some pine twigs at the foot of the flowerpot to tempt them. Evidently their slight sense of smell and of sight was not sufficient to help them in this time of need.

However, some gain had been made, for they had laid silken threads on the side of the pot, which would be followed later. But it was not till the eighth day after their arrival on the rim that the company made their way haltingly down the sides of the pot and finally reached their nest.

Not the slightest reason had shown itself in the insects throughout the experiment which covered nine days altogether. Instinct alone guided them when a little reasoning would have brought them freedom from hunger and cold and weariness.

"I cannot believe, after such experiments as that," Fabre would have told us, "that through the struggle for life, instinct ever develops into reason."

CHAPTER XXIII

Helpers

"I will not give up my search for it."

So thought Fabre after twenty years of vain hunting for a rare and precious moth he wished to secure. His children had helped him in the search, as well as many a boy and girl in the country around, who seemed equally eager to aid him. He had such a pleasant smile for every young discoverer. Then, too, he was so merry and witty, while his reward for any effort was always so generous! Perhaps this was a coin; or maybe tempting sweets, such as rarely entered the mouths of those little peasants, were forthcoming. At any rate, Henri Fabre, old in body now, knew that he could trust the bright eyes of the little folks around Serignan to aid him, now that his own sight was not as good as he might wish.

At last, after those twenty years of search, success came to him.

In his *Souvenirs* he tells us how this happened: "A little chap of seven, with a wide-awake face that doesn't get washed every day, bare feet and a pair of tattered breeches held up by a bit of string, a boy who comes regularly to supply the house with turnips and tomatoes, arrives one morning carrying his basket of vegetables. After the few sous due

to his mother for the greens have been counted one by one into his hand, he produces from his pocket something which he found the day before beside a hedge, while picking grass for the rabbits.

"'And what about this?' he asks, holding the thing out to me. 'What about this? Will you have it?'

"'Yes, certainly, I'll have it. Try and find me some more, as many as you can, and I'll promise you plenty of rides on the roundabout on Sunday. Meanwhile, my lad, here's a penny for you. Don't make a mistake when you give in your accounts; put it somewhere where you won't mix it up with the turnip money.'"

The "something" which that little seven-year-old had found was none other than the cocoon from which the rare and long sought moth would soon be born, as Fabre knew as soon as he examined it.

Another little friend of the nature lover, a young shepherd, also showed himself a valuable helper.

"Watch for any signs of the Sacred Beetle." So Fabre had said to the boy when the time was at hand for the insect's appearance above ground.

"I have seen it," cried the young shepherd as he came to the Hermitage in great glee one day late in June.

It was even so. The lad had discovered the beetle making its way out of the ground, and had dug down into the earth and found a tiny, curious looking object not far below the surface.

He had then made haste to bring it to his old friend whom he loved and admired, though Fabre doubtless seemed to him a little queer because he devoted his life so largely to what people generally considered worthless insects.

Fabre examined the object with the deepest interest. It was like the tiniest of pears after turning brown from rotting.

"It must, it *must* be what I have searched for more than thirty years," decided Fabre, "yet it is quite different from what I expected."

Early the next day he joined the boy on the hill slope where the discovery had been made.

The search began at once. As soon as a beetle's burrow was sighted, the young shepherd was directed to unearth the secret cave below while his companion stretched himself out on the ground beside him, watching eagerly what would shortly be exposed to his eyes.

He had not long to wait since the object he sought was soon revealed to him. "A splendid pear," as he called it, lay in the beetle's moist underground castle where her mother instinct had led her to prepare the nest of the little one that would soon be born. After thirty years of wondering inquiry the faithful searcher found that morning that the "pill" of earth a beetle rolls along the ground was not the nursery of the next generation as had been supposed. We can scarcely imagine his joy at that moment.

Fabre seldom went into the village of Serignan

where few of the people were able to understand him and appreciate his work. But there were two among them who were his devoted friends from the start. One of these was the schoolmaster, at first Laurent, and then Louis Charrasse, who in turn was followed by Juillan.

The second companion of Fabre's spare hours was a blind man, Marius Guigne. The two men often joined the naturalist and his family on winter evenings when they gathered around the fireplace where oak logs were kept burning. The talk was sure to be lively and about all sorts of affairs except "hateful politics" as Fabre called the one subject he detested.

Marius was quite poor. He had been blind ever since he was a youth of twenty. He supported himself by making and mending chairs, and had little hope of bettering conditions. Yet he was ever calm and serene, and ready to see the funny side of whatever happened.

For the first two years of life at the Harmas a third companion who helped to make life joyful there must certainly be mentioned. This was Fabre's manservant, an old soldier named Favier.

In many a land Favier had traveled and seen strange sights.

"He has pitched his hut of clay and branches under the African carob trees," Fabre wrote in his *Souvenirs*. "He has eaten sea urchins at Constantinople; he has shot starlings in the Crimea, during

a lull in the firing. He has seen much and remembered much. In winter, when work in the fields ends at four o'clock and the evenings are long, he puts away rake, fork, and barrow, and comes and sits on the hearthstone of the kitchen fireplace, where the billets of ilex wood blaze merrily. He fetches out his pipe, fills it methodically with a moistened thumb and smokes it solemnly. He has been thinking of it for many a long hour, but he has abstained, for tobacco is expensive. The privation has doubled the charm; and not one of the puffs recurring at regular intervals is wasted."

The best part of the day had now arrived for the Fabres. Favier, who was a born story-teller, began forthwith to tell of the marvelous happenings of his life. He described watches in the trenches before Sebastopol when the shells of the enemy fell thick and fast about him and he expected every second to be blotted out of existence. As he talked, he held his listeners spellbound with horror. Then, perhaps, he would turn to lighter things, and repeat stories told by his fellow soldiers in the barracks and of the dishes served in the mess room.

Favier's knowledge about strange and rare foods was remarkable. Eels and snakes, lizards cooked in oil, the delicious leg of the fox—these and many other rare feasts he had eaten and knew how to prepare.

Moreover, he had such a keen eye for all natural things that he was of invaluable service in telling his

master where this or that plant grew, and could guide him to its home in wood or field.

How think you, did Fabre discover his treasured assistant? It came about in this way: he was unpacking two enormous sea spiders which had been sent him from the seashore by a friend. Some workmen busy on repairs of the house returned from their dinner at that moment. Catching sight of the strange, horrible-looking creatures, they cried out in surprise. One alone among them, none other than Favier, had no fear of the spiders. Dexterously lifting one of them, he declared, "I know that thing; I've eaten it at Vasna. It's first-rate."

As he spoke, there was an expression in his eyes that seemed to say to the onlookers, so Fabre tells us, "You've never been out of your hole, you people."

His future master must have decided then and there: "Here is the very man I need. He will be of immense help to me in my work."

Time proved that he judged rightly. Favier showed himself ever on the lookout for fresh discoveries; as for instance, on the day when he was busy clearing away some leaf mold in the harmas. As his spade opened up the earth he suddenly cried out that he had made a wonderful find.

Sure enough! as Fabre hastened to his side he beheld in the cleared space a large colony of rare insects in all degrees of development, from larvæ up to the stage of full growth. Such a sight, offer-

ing rich opportunities for study, had perhaps not been afforded the naturalist for many years. Well might he appreciate the assistant who gave him invaluable aid.

After two years of faithful service Favier disappeared. The love of adventure and excitement had probably seized him again and the Harmas knew him no more.

Now it was that Marius took his place as Fabre's devoted assistant. Blind though he was, he could care for the garden, do a little carpentering such as making cages for needed experiments, stuff birds and the like. And sometimes it fell to him to hold an umbrella over his master's head on hot days when he needed protection from the burning sun while watching his fascinating insects.

With such sympathetic comrades who were always welcome in his home, Fabre spent many a happy Thursday and Sunday afternoon. To them the master could speak freely of his discoveries, and sure of their interest, could read to them what he had been writing for the outside world.

CHAPTER XXIV

The Slave Hunters

Did you ever watch a colony of ants? And while thus watching, did you ever wish you knew more about their remarkable life?

Among the books Fabre wrote during the years he lived in Serignan, none are more interesting than his *Insect Adventures* in which he has told about the wars carried on by the red ants.

One corner of the patch of waste ground in the harmas had attracted his attention early. He discovered that it was in itself a splendid laboratory because of the curious insects that dwelt there. No finer field had he ever found in which to study the red ants that had won renown for capturing slaves and making them obey their will.

Fabre learned that they were not as cruel as it would appear. They were not able to raise their families and search for food themselves; consequently, they needed servants to take care of their homes and feed them, and by warfare alone could they obtain these. They must consequently steal out from their own village to take the inhabitants of other ant hills by surprise.

There must be no attack upon other red ants,

however. The black ants must alone be the ones sought, because they could be overcome easily.

When the time came for an assault, the attacking party started forth, traveling in a line perhaps five or six yards in length.

As another ant hill was neared scouts were dispatched to look over the field. All must be sure that here was the proper place for attack. If such proved not to be the case, the army continued on its way, often traveling a long distance. Now it would be hidden from sight as it made its way through patches of grass and weeds. Again, it would perhaps appear crossing some garden in its way onward to the goal, driven ever by its unfailing instinct.

At last the searched-for nest was at hand. The enemy swarmed upon it. One after another, the hunters made their way into the sleeping chambers of their prey and soon appeared outside, each carrying a tiny cocoon in which a precious baby ant was nested.

Terrible was the fight which followed as the black ants came swarming out to defend their helpless little ones. But their efforts were in vain. Their enemies were too strong, too powerful for them to resist long and the battle was shortly at an end. Then back marched the hunters to their home, each with an ant baby, still in its swaddling clothes, hanging from his jaws.

As Fabre watched the adventurers returning he

knew well from past observation that the tiny, still unborn prisoners were in due time to become the nurses of the red ants' children and attend to other duties belonging to servants.

The naturalist's six-year-old granddaughter Lucie had watched the battle with him and was deeply touched at the theft of the swaddled, helpless babies. After that she was ever on the lookout for another such raid.

So it happened that one day, some time afterwards, as Fabre described what took place, she came hurrying to his study in great excitement. " 'Come quick!' she called to him, 'the Reds have gone into the Blacks' home.'

" 'And do you know the road they took?' he asked.

" 'Yes, I marked it.'

" 'What! Marked it? And how?'

" 'I did what Hop-o'-My-Thumb did: I scattered little white stones along the road.' "

When her grandfather went with the child to the path she had marked, the two found the ants still on their homeward way. But after Fabre had lifted some of them up on a leaf and placed the leaf a short distance from the path, they no longer knew how to find the way home. Their sense of sight and memory which had been guiding them so far on their way back could not help them now.

"The memory of an Ant!" the watcher has written. "What can that be? Is it like ours? I do not

know; but I do know that though closely related to the bee, she has not the same sense of direction that the bee possesses."

Among many other delightful stories about insects, Fabre has told of a thrilling battle between a yellow-winged wasp and a mighty cricket.

"Watch her chasing one," he writes. "The terrified cricket takes to flight, hopping as fast as he can; the wasp pursues him hotfoot, reaches him, rushes upon him. There follows, in the dust, a confused struggle, wherein each fighter is in turn victor and vanquished, on top and underneath. The issue seems doubtful. But at last the wasp triumphs. In spite of his vigorous kicks, in spite of the snaps of his pincerlike jaws, the cricket is laid low and stretched upon his back.

"The wasp places herself upon him, belly to belly, but in the opposite direction. She grasps one of the threads at the tip of the cricket's abdomen with her mouth and masters with her forelegs the convulsive efforts of his thick hinder thighs. At the same time her middle legs hug the heaving sides of the beaten insect, and her hind legs force the joint of the neck to open wide. The wasp then curves herself outward so as to offer the cricket no chance to bite her, and drives her poisoned sting once into the victim's neck, next into the joint of the front two rings of the thorax or part next the neck, and lastly towards the abdomen. In less time than it takes to tell, the murder is done; and the wasp after making

herself tidy again, gets ready to haul home the victim."

In the terrible battle just described the greatest cunning was shown by the wasp in turning the cricket on his back so that he could not use his hind legs in escape, nor be able to seize her with his powerful jaws and eat into her vital organs! Furthermore, as Fabre has pointed out, she held down his spurred legs with her front feet to prevent his kicking her, and at the same time she kept his jaws from harming her by means of her hind legs.

Quite as wonderful in the watcher's opinion was the skill shown by the wasp in her method of making the cricket powerless; she sought to paralyze her prey instead of killing it. By so doing the insect's body would continue to be fitting food for her babies for a long time to come.

Fabre has made clear how the cricket lost the power to move. The wasp acted like a skilled surgeon, striking at the nerve centers that controlled the use of the legs.

For days afterwards the student watched the cricket after the hunter had taken him to her nest. He found that though still paralyzed, he continued to live.

The wasp, he noted further, laid an egg close to her prey after placing it in the nest. Then, closing up the entrance with sand and gravel, she proceeded to make another nest, fly off in search of more game,

and deposit it in the same manner as before for the use of the next egg she would lay.

Countless other things equally marvelous, and showing the wonders accomplished through instinct, Fabre discovered in the course of the busy years spent in Serignan. He learned of the daring thefts of the sacred beetle, which is more often called the tumblebug; of its royal feasts which sometimes last throughout a day and a night; and of the remarkable care the mother beetle takes of her little ones, making the softest of couches for their tender bodies, and, like the wasp, preparing food for their eating as soon as they hatch.

Fabre also made careful study of the parasites that cause insects many a bitter struggle in striving to protect their homes and families. The nature student found that these little robbers were ever on the watch to settle themselves in the homes built by others with great labor, robbing the owners of their stores and often cruelly murdering the helpless babies.

Exciting tales of adventure in the lives of the tiniest creatures, therefore, Fabre tells us, as well as humorous and sad ones like that of the aged bee no longer able to gather honey and whose duty becomes that of standing guard at the entrance of the hive. Space, however, will not allow further accounts of the great man's discoveries in the insect world, and only scant mention can be made of his

interesting stories about the domestic animals he loved—the dog, the cat, the horse.

We must go directly to the delightful books he has written which lay bare before us a wonder world close at hand where we ourselves may wander whensoever we will.

One day, so we are told, a friend of the naturalist spoke to him about the seeming miracles that Nature performed.

"They prove to me," said this friend, "that God exists!"

Fabre answered quickly, "I do not *believe* in God, because I *see* Him in all things and everywhere."

In other words, God was so real to the great nature lover that no mere statement of belief could express his sense of that Supreme Reality.

CHAPTER XXV

The Great Festival

It was the year 1910. Fabre was now an old, old man, his small form bent with age, his face thin and lined from constant work, but his deepset eyes still full of fire and energy.

For nearly thirty years he had lived in his quiet home with little thought of the noisy world beyond the borders of Serignan. In that outside world the man Fabre was little known except to scientists and men of letters, though his books had been widely read. He had, to be sure, been made an honorary member of the French Academy of Science and of famous academies in other lands. He was also, as we know, a member of the Legion of Honor, and his valuable writings had received fitting awards. And yet, as already stated, comparatively few people in his own and other countries understood what he had done for science in a practically new field.

"It is time that this ignorance should come to an end," agreed some of his friends. "Let us arrange a jubilee for him. It must take place, of course, in Serignan where he has labored so long. There must be a great gathering of people to celebrate his long and helpful life, with a banquet, and toasts, and fireworks."

Preparations for the great event began at once. Throughout France and other lands invitations were sent forth to attend the Fabre Jubilee.

Thus it came about that in April, 1910, the simple peasants of Serignan waked to find their village a scene of unusual excitement. Crowds of strangers had arrived to join them in giving honor to the plain little man who had won their love and admiration during the many years he had spent among them.

The place set for the celebration was close to the borders of Fabre's precious harmas where he had made so many delightful discoveries among its insect inhabitants. There the shepherds and farmers of the neighborhood assembled, together with the loved friends who had stood by the naturalist through days of struggle and misfortune. There, too, were distinguished men of science and of literature.

The center of attraction, Jean Henri Fabre, received the great company on the threshold of his home with his ever faithful helpers, the members of his family, about him. His delicate wrinkled face showed the marks of long years of constant labor, but the deepset black eyes were still full of fire as they turned from one to another of the guests who had come to do him honor.

The banquet which followed was given in a large room of the village restaurant in Serignan, and since Fabre did not have the strength to walk there, he was borne to the place in state in a carriage which

had come all the way from Orange for this purpose. A procession of his admirers attended him, together with a village choral club. Thus attended, he arrived at the restaurant where a real love feast followed. Toasts of deep appreciation were given in his honor; speeches of admiration were uttered; and a member of the French Institute reviewed the nature lover's life with deep feeling and spoke of his work which could never die.

Messages from great men who could not be present were also delivered. In one of these Fabre was referred to as "the good magician who knew the language of the myriad little creatures of the field." In another, the famous writer, Edmond Rostand, spoke of Fabre as "one of the purest glories of France—who has brought us to our knees in the grass, the hermit whose life is the most wonderful example of wisdom, the noble figure that under its black felt hat, makes Serignan the complement of Maillane."

The larger town of Maillane, it should be said, had joined with its neighbor Serignan in the Fabre Jubilee.

During the celebration a gold plaque, on which a portrait of Fabre had been engraved, was presented to him. It had been sent by the Academy of Science. It was a touching moment for all as he received it. The old man's eyes filled with tears, as did those of the people around him. He could now feel at last that after a lifetime of struggle and

hard work and the unjust criticism of others, he was appreciated.

Another award which brought Fabre great delight was the precious Linnæan Medal which had been sent him from the Royal Academy of Stockholm in Sweden by order of the Government there.

Moreover, at the time of the Jubilee, a new edition of the *Souvenirs* had been brought out by his publishers, and the now famous volumes were eagerly purchased by admiring people.

There was still another mark of honor for Fabre: it was the decoration of the Legion of Honor which raised him to the rank of officer in that distinguished institution whereas, during previous years, he had merely been a chevalier.

Soon after the Jubilee, the now celebrated naturalist had a fresh surprise: it was the gift of the largest prize in money bestowed by the French Academy. Nor was this all, for with it Fabre was informed that he had been recommended for the much coveted Nobel prize which was bestowed each year on the man or woman who had achieved the most in art, science or letters during the previous year.

Fabre had scarcely settled down to his ordinary quiet life when a large company of visitors suddenly appeared at his home. It consisted of girl students who had journeyed from the university they attended in Paris, to do honor to the great poet Mistral who lived in Maillane, and to Fabre

the "King of Science," as they called him, in his simple home at Serignan.

Those enthusiastic young students knew well of the troubles that had come to Fabre in the past through his efforts to give girls the same opportunity as boys to learn of the discoveries of science. And they heartily appreciated the fact that these efforts had marked one of the first steps leading to the better education of women in the country. In meeting with this true friend, the students tried to tell him of the gratitude they felt for him and of their happiness in being with him at last, face to face.

About this time Fabre's admirers decided that the likeness of their honored friend should be put into lasting form.

"Our country must have his statue," they declared, "so that when he is no longer among us, people will still be able to look at the face which is so full of kindliness and love."

Once the proposal had been made, rich and poor, old and young, learned scholars and ignorant peasants, became enthusiastic over the idea. Not one statue alone would satisfy them. The different places where Fabre had lived and worked wished monuments of their own.

What did Fabre himself think in regard to this new and lasting mark of honor? His main desire was that if a statue was to be set up for him, those who beheld it should be led to think of him as a worker, a faithful student. In his mind work was

the best and most enjoyable thing in the world. When a frequent visitor at his home spoke of the statue proposed, he replied: "Well, well. I shall see myself, but shall I recognize myself? I've had so little time for looking at myself!"

His friend went on to ask him what inscription he would like to have placed on the statue.

"One word: *Laboremus,*" he replied simply.

Laboremus—let us labor—yes, that summed up for him, Jean Henri Fabre, the best and truest way of living. For the noble old man who had been born in the family of humble peasants and had fought his way step by step, in privation and poverty, up to knowledge and the esteem of the whole world, had scorn only for an idle and useless life. Labor to him was ever noble. It brought its own reward and its own joy.

As for the acclaim of the world, his judgment was also keen and true and unchanged by the many honors bestowed on him at the Jubilee. Let us imagine ourselves listening as he sometimes talked with a friend, while leisurely smoking the pipe which was his almost constant companion. As the smoke from the pipe rose above him and disappeared in thin air, he would say, "Such is the nature of human fame. It is a thing of the moment."

CHAPTER XXVI

The Noble End

When crowned with ninety years of hard work, Fabre surely deserved to have his last days filled with happiness. Long delayed renown had come to him, and henceforth he was to receive a pension from the government that made worry about the support of his household unnecessary. The books he had written sold so readily that his income was further increased in large measure. He had many devoted friends, and his acquaintance was sought by great men. What more could he wish for?

"The love of my dear ones is the most precious of all possessions." In such wise Fabre would have answered the question. He needed the affection of his devoted wife and children and grandchildren as well as that of the brother who had always been close to his heart, to make his life a joyous one. But unfortunately, two years after the Jubilee he lost his wife and in the following year death also robbed him of his brother.

Shortly afterwards his youngest son, "little Paul," so often mentioned in his books, was married, as were his two youngest daughters. Beside what it had been before, the Hermitage was now a lonely place where the laughter and pranks of little folks were seldom known.

The devoted naturalist became feeble and ailing and his heart was heavy with sorrow. His suffering grew even greater when the Great War had been declared and raged in fury about him, and when news reached him that a son and two sons-in-law had lost their lives in the struggle, he was well-nigh broken by his grief.

He had always believed that war was not for civilized people. It belonged to the life of savagery, and should long since have been outgrown. And now! to see it ruthlessly sweeping from the earth the best of the youth of many lands seemed horrible, horrible to him. He was crushed.

Still, however, he could turn to the birds, the flowers and the insects for some comfort, because in them he could behold the loving power of the Heavenly Father at work. It was a beautiful sight —that of the fast-weakening old nature lover holding a flower in his long, delicate fingers and gazing at it with tender admiration. He could realize that though hatred and strife raged outside in the world of men, peace and order and beauty were still to be found in Nature if one looked for them.

He did not live to see the end of the Great War. The courage that had upheld him in his labors for so many years had faded quite away with the second year of the terrible struggle, and the eleventh day of October, 1915, arrived to find him peacefully breathing his last.

With firm faith in the good God, he bade good-by

to this world which was for him so full of marvels that he felt he could easily devote several lives to their study and still find it abounding in interest. In the infinitely small he found the infinitely great.

Fabre's funeral which took place five days after his death was simple, as he would have wished it. The Archbishop of Orange conducted the services in the little church at Serignan, after which his body was followed to the grave by crowds of people who had gathered from far and near in honor to the lover of all created things.

As a distinguished journalist was paying a touching tribute to the man of eternal youth who had just left his earthly home, there was a sudden stir among the thrilled listeners. The eyes of all present were directed towards the cloth-covered casket up which a snail was slowly making its way. Over the snail jumped a grasshopper, followed in turn by a volette and a ladybug. Surely there could have been no more fitting conclusion than this to the last services for the humble yet truly great man who had revealed to human beings wonders of creation of which they had not dreamed. Those who were present that day realized that his influence would continue into the ages. Through his help others would come to "see God" as he had seen Him. No more valuable work than this could be accomplished by the greatest ruler or scholar or explorer in the wide world.

THE BOY WHO FOUND OUT

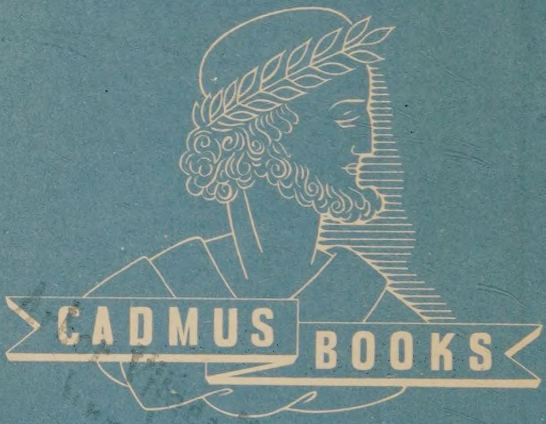
This story about a real boy, Henri Fabre, gives us a picture of peasant life in France and also tells a great deal about the work of a scientist. No doubt you will want to look up some of these subjects many times. This index will help you to find the right page.

FRENCH PEASANT LIFE:

Clothing, 1, 3, 5-6, 32
Customs, 1-9, 29-31, 38
Food, 3, 7, 26
Occupations, 3-8, 26-33
Schools, 13-24, 59-82, 146-147

INSECTS:

Ants, 201-203
Bees, 169, 206
Bees, mason, 83-84, 108-111, 177-178
Beetles, 195-196, 206
Caterpillars, 189-193
Ladybugs, 161
Moths, 180-183, 194-196
Tarantulas, 165
Wasps, 103-107, 111, 114-117, 155, 161, 204-206



Woodruff Schools
Wisconsin

AUTHOR
Wade, Mary Hazelton
TITLE
The Boy who Found Out
E DUE | BORROWER'S NAME
Public High - Woodruff Schools
Woodruff, Wisconsin

200